CHANGE SERVICE REQUESTED

June 22, 2007 Volume 29 Number 25 www.processor.com



Green Computing In The Data Center

Is Your Enterprise Doing Its Part?

by Chris A. MacKinnon

THE WORLD IS MAKING an effort to make everything "greener." But according to some experts, the data center could pitch in a little more help. In fact, Richard Hodges, principal of GreenIT (www.green it.net), says everything we do depends on and affects the natural environment that

supports life on earth. Hodges says, "IT is both a significant (and rapidly growing) contributor to environmental problems and a potential enabler of solutions to environmental problems."

The Concept Defined

Today, green computing is more than just sticking a nice green plant in the corner. The concept of green computing is all about understanding and management. Hodges explains, "What green computing means is understand-

ing and managing the environmental impacts of your IT systems, including materials and resources used to make equipment, energy and materials used in operating systems, potential health effects on humans from using equipment, and responsibility for the waste products that are created from IT systems."

Scot Case, customer services and relations manager for the Green Electronics

Go to Page 10



Solving VoIP Problems

Take The Crackle & Pop Out Of VoIP Calls

by Curt Harler

VoIP HAS COME A LONG WAY since a decade ago when dropped calls were common and callers sounded like they were talking with a mouthful of Rice Krispies. No longer is VoIP a pure trade-off of quality for savings.

VoIP offers advantages beyond reduced long-distance costs. For many small to midsized enterprises, the ease of moves/ adds/changes is a major selling point. Workers simply unplug their phones from one cubicle and move to another. Fiddling in the telecom closet is no longer required for configuration.

Still, VoIP can have annoying glitches. Several experts maintain you can avoid those problems with a bit of practical engineering when the network is set up and some good monitoring once things are running.

According to Niel Levonius, senior product marketing manager at Alti-Gen (www.Processor.com/AltiGen), the simplest way to maintain VoIP quality is to ensure that switch and router QoS settings are configured properly. "IT managers should continually monitor the data traffic on their network to ensure

VoIP offers advantages beyond reduced long-distance costs. For many SMEs, the ease of moves/adds/changes is a major selling point.

ample bandwidth is always available,"

"It is a very different world with voice on the network," says James Messer, director of technical marketing at Network General (www.Processor.com/Network General). "Dropped calls are an issue everyone struggles with; even mobile markets are concerned about dropped calls," Messer notes. For decades, the five-nines reliability of the PBX-dominated voice network was standard. Email might get slow, the Internet might be down, but people expect voice calls to continue, even in the face of disaster. Today, VoIP networks struggle to achieve two-nines reliability. The reality on many VoIP networks is in the 97% area.

"A good metric for voice is no dropped calls," Messer says, adding that such a goal is not realistic on today's VoIP networks. "Expectations for voice will change. We are training ourselves to have different

Go to Page 10

In This ISSUE

COVER FOCUS

Energy-Saving & "Green" Strategies

The world is working to make everything "greener." But according to some experts, the data center could pitch in a little more help.

Green Computing In The Data Center	1
Strategies For Green Computing	9
Powering Down The Client	11
Safely Eliminating E-waste	12

TECH & TRENDS

Solving VoIP Problems | 1

VoIP can have annoying glitches. Several experts maintain you can avoid problems with a bit of practical engineering when the network is set up and some good monitoring once things are running.

Image Spam Reaches Center Stage | 23

In the past year, image spam has become a growing epidemic that most security companies have yet to contain.

Implementing An iSCSI SAN | 24

Is iSCSI the way to go? What issues surround iSCSI SANs, and what should administrators keep in mind as they go about planning an iSCSI SAN implementation?

One-Time Pad Encryption | 25

One-time pads continue to fascinate the hypersecurity conscious with a promise of theoretically unbreakable encryption.

Product Releases | 16

■ Accellion released the latest version of its secure file hardware and software product, Secure File Transfer 6.0. ■ AirMagnet released its Handheld Analyzer 7.0, which is aimed at giving customers a handheld for proactively diagnosing and troubleshooting WLANs. ■ Bus-Tech announced its Mainframe Data Library and Mainframe Appliance for Storage together with the Hitachi Content Archive Platform. ■ FalconStor **Software** and **V2 Electronics** are offering a new range of storage appliances based on V2's line of hardware platforms and FalconStor's data protection products. **Fortinet** added two new products to its FortiGate 3000 Series of multithreat security appliances. ■ GlobalSCAPE introduced Enhanced File Transfer Server 5.0, a Windows-based product that provides tools for transferring files between employees, business associates, and customers. ■ Global Technology Associates released the lat-

■ Global Technology Associates released the latest version of its firewall system software, GTA GB-OS 5.0. ■ NetApp's addition of SnapManager for Microsoft Office SharePoint Server 2007 helps to assist with data management, backup recovery, and deployment. ■ Silver Peak Systems provided an updated version of its NX family of appliances and Global Management System software.

EACH WEEK

Upcoming IT Events4	Product Releases16
MarketPlace News4	Opinions22
Six Quick Tips5	Three Questions27
Processor.com5	What's Happening27

The Processor.com home page is updated each week with new articles and hardware news to help you keep current.

Visit www.processor.com today.

PLEASE PRINT	Today / Address		information and r	nall or fax.
Phone: ()_		Fax: (_)	
Contact Name:				
Address:				
Country:				
Email:		Web Address	s:	
What is the size of the control	lovees)?		your annual computer purchasing budget	
Less than	□ 200 to 499 □ 500 to 999		30 to \$9,999	□ \$100,000 to \$249,999 □ \$250,000 to \$499,999 □ \$500,000 to \$999,000
How often do yo hardware/software	ou purchase computer			_ , , , , , , , , ,
::G:G:TG:G/30::WC	□ Quarterly			

PROCESSOR © Copyright 2007 Sandhills Publishing Company. All rights reserved.

Subscriptions: (800) 819-9014 Subscriptions Local: (402) 479-2170 Subscriptions Fax: (402) 479-2123 Mail Form To:

P.O. Box 85518, Lincoln, NE 68501-5518 Overnight Delivery:

120 West Harvest Drive, Lincoln, NE 68521

www.Processor.com

Advertisers Index			
COMPANY PAGE 360 TECHNOLOGIES	COMPANY PAGE DRIVE SOLUTIONS INC	COMPANY PAGE ISTOR NETWORKS INC	COMPANY PAGE PYRAMID COMPUTERS USA
A10 NETWORKS	DYNAPOWER USA	LXE INC6	RACKMOUNT SOLUTIONS
A10 NETWORKS	EASYSYNC LTD	MEDIA RECOVERY30	RACKMOUNT SOLUTIONS
APERTURE8	ELI SYSTEMS INC	MELLANOX TECHNOLOGIES INC	RECYCLE YOUR MEDIA
ARC COMPONENTS	ENHANCE TECHNOLOGY8	MENDAX MICROSYSTEMS29	REGENT SALES INC
ASA COMPUTERS	ENHANCE TECHNOLOGY	METAGEEK24	ROSE ELECTRONICS
ATEN TECHNOLOGY INC	EQUIPMENT MANAGEMENT INC	MOVINCOOL20	SANS DIGITAL29
ATLAS SALES AND RENTALS	ETASIS USA INC	NETMASS	SERVER TECHNOLOGY
AVTECH SOFTWARE INC	GLOBAL PRINTER SERVICES	NETWORK APPLIANCE INC	SERVER TECHNOLOGY
BAYTECH	HELLERMANN-TYTON	NEXITECH20	SMS ASSEMBLY
CENTENNIAL SOFTWARE	HERGO ERGONOMIC SUPPORT SYS	NEXSAN TECHNOLOGIES	STACO ENERGY PRODUCTS CO
COMPUREX SYSTEMS	HERGO ERGONOMIC SUPPORT SYS	NLE31	STAY ONLINE CORP
COMPUTER CONNECTION	HORIZON DATACOM SOLUTIONS	NORTHWEST PERFORMANCE SOFTWARE29	TECHNOLOGY INNOVATION INC
CYBER SWITCHING	HORIZON DATACOM SOLUTIONS	NRS INC31	VECMAR COMPUTER SOLUTIONS
DATA NETWORKS INTERNATIONAL	I T TRADING	OVISLINK29	VIBRANT TECHNOLOGIES INC
DATA RELIANCE CORPORATION	I-TECH CO	PACE / BUTLER CORP31	WINSTED13
DATAMEDIA SOURCE	INBUS ENGINEERING	PEGASUS COMPUTER MARKETING	XROADS NETWORKS
DIGITAL BROTHERS GROUP	INFORMATION SUPPORT CONCEPTS	PLATESPIN6	ZEROWAIT30
DMD SYSTEMS RECOVERY11	INTERNATIONAL SYSTEMS MGT	PULIZZI ENGINEERING INC	

DATA CENTER SERVICES

What Do You Do With Your Old Tapes?

Recycle Your Media Buys All Types Of Tapes & Recycles Them Using Secure & Environmentally Sound Methods

THE MOST VIABLE SOLUTION for your endof-life media is to recycle using a reputable service provider such as Recycle Your Media. Not only is tape recycling environmentally sound due to the overabundance of e-waste in landfills, it is also economically sensible because you can recoup IT costs.

Virtually every enterprise uses tape media for protecting and storing data. And the use of tape media is growing sharply as the amount of electronic information grows and enterprises face increasing legal and regulatory pressure to store electronic information.

No Trivial Matter

According to the EPA, nearly 3 million tons of consumer electronic waste was generated in 2003; it's estimated that only about 11% of this was recycled. Tape disposal is not a trivial matter. Not only does tape contain confidential company information that must be either erased or destroyed so that it does not fall into the wrong hands, but tape media is not biodegradable and should be eliminated from the solid waste stream.

To reduce costs, ill-equipped or unreputable recyclers may work through brokers to send media to other countries or illegal waste dumps in the U.S. That means your tapes and data may change hands many times before being destroyed.

When dealing with disposal service providers, reputation is the most important factor to consider. Always work with a reputable disposal service provider that uses only approved disposal methods and can provide you with a certificate guaranteeing your tape has been properly disposed of.

Can My Media Be Degaussed?

Not all popular computer cartridges can be degaussed and must instead be overwritten with special software. Consult this chart for common media that can and cannot be degaussed.

Product Type	OK To Degauss
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(Yes/No)
AIT 1,2,3,4	Yes
DC100/1000	Yes
DC-2XXX	Yes
Travan 1,2,3	Yes
DC-6XXX	Yes
Magnus	Yes
SLR-5	Yes
DDS	Yes
DAT	Yes
Mammoth	Yes
34X0	Yes
DLT X	Yes
SDLT X	Yes
Travan 4,5,7	No
SLR-6,7	No
3590(J)	No
3590E(K)	No
9940 / 9940	No
LTO 1,2,3	No

A reputable disposal service provider can even bring the degaussing equipment onsite and manage it with trained personnel. For tape media that contains sensitive information, this provides a means of recycling, rather than destroying, tape media.

Your Tape Disposal Options

There are two methods of disposing of tape media: destruction or eradication. In destruction, the tape is incinerated or cut and pulverized. Eradication involves erasing the tape's data by applying a high-intensity magnetic field to the tape. Proper erasure removes the risk that the pre-existing data on the tape falls into the wrong hands. But only professional-grade degaussing equipment, correctly calibrated and operated by experts such as Recycle Your Media, will do a proper job of erasing cartridges.

To reduce the risk of losing confidential data, the easy decision may be to destroy the tape, but this carries a cost burden and it impacts the environment. The decision to recycle tape has advantages for the environment and for your expenses, but it also carries the risk of data loss.

When choosing whether to recycle tapes, consider these factors:

- Tape that has been mishandled or is old and worn out or simply damaged cannot be used again. This tape has no more useful life and should be destroyed.
- If your tape media is in good condition, recycle it. Even if a tape is two years old,

it likely has not been used continuously. It is common to find tape that has only been used for a fraction of its useful life.

JUNE 22, 2007

 If you're upgrading to the newest tape technology, chances are other organizations can still utilize the tapes. In this case, recycling is the right option.

Perfect For Recycling

Recycle Your Media is focused and concerned about the statistics involving the destruction of our environment caused by excess e-waste in landfills. Recycle Your Media exists to provide a service that is environmentally conscious and prides itself in maintaining safe and secure methods for your end-of-life data solution. Recycle Your Media has innovated and perfected a way to ensure companies worldwide that there is a solution to these ongoing issues.

Sell us your new, used, or even obsolete media. Your sensitive data is secure and destroyed with manufacturer-approved processes and equipment, and you will get a Confidentiality Agreement upon request.

We've implemented an aggressive data media recycling program that is easier than ever. Every Recycle Your Media master shipment includes a prepaid product-shipping label. When conscientious customers return data cartridges, we pay the postage.

Recycle Your Media

Provides a tape recycling service that is environmentally conscious, safe, and secure

(877) 798-2737

www.Processor.com/Recycle



STORAGE June 22, 2007

Advanced Single-Instance Storage Deduplication

NetApp's A-SIS Helps SMEs Reduce Storage Costs

MENTION THE WORD data replication, and most IT staff will know what you mean. However, if you ask what deduplication means, you'll probably get a blank stare. In the storage world, it means looking for duplicate data and eliminating it. Network Appliance's A-SIS (Advanced Single-Instance Storage) does just that.

The product has been around for almost two years as a part of Symantec's NetBackup product. Now you can get it with any NetApp FAS or NearStore R200 storage system. This soft-

ware runs in the background and has a negligible effect on the overall performance of the system.

Deciding whether this product will work for you depends on how you use your storage system. In the case of backups, it is highly likely that much of the data saved in a backup operation is identical to that in a previous backup. This type of scenario is perfect for deduplication and will result in significant savings.

In nonbackup applications the probability of recurring data is not as high but may still contain a significant amount of redundant data. The key to optimizing this type of situation is the granularity or size of the data objects that the system examines. NetApp A-SIS uses a high degree of granularity and



a digital signature approach to identifying duplicated objects.

One key advantage of the A-SIS software is the tight integration with NetApp's Data ON-TAP storage management software and its proprietary WAFL (Write Anywhere File Layout) storage virtualization technology. A-SIS can perform in the most efficient manner without adding any significant overhead to the file storage and retrieval process.

Enabling A-SIS requires only a single command line instruction on the supported storage systems. Once enabled, the

process runs in the background to free up redundant areas on the file system.

Network Appliance A-SIS

Included at no charge on all NearStore on FAS and NearStore R200 systems

Handles the task of removing duplicate data on a storage system to reduce overall capacity requirements

(408) 822-6000

www.Processor.com/NetApp2



BUSINESS PRODUCTIVITY

JUNE 22, 2007

Centennial Discovery Supports Windows CE

Platform Extension To Other Handheld OSes To Come Later

IT MANAGERS ARE trying to spread their resources to encompass the handheld computer. Centennial Software is making the effort easier by extending its Centennial Discovery platform to include support for Windows CE-based devices.

"Handheld devices are becoming ubiquitous,"

says Bill Piwonka, vice president of management. "As computing moves off the desktop and onto these mobile devices, IT organizations need to have visibility and be able to affect their own asset management policies that they've had in place for desktop and laptop computers."

As handheld computers grow in popularity, so does the level of data on the devices. IT departments are trying to manage the devices that often enter the equation after employees have already begun using their personal devices for work.

Centennial Discovery will help businesses broaden their asset management policies and capabilities from server to desktop to handheld device, Piwonka says. Client agents installed on the host computer detect the handheld computers when they attempt to sync, allowing the IT department to learn about the device location, operating system, attached memory, hardware configuration, software installations, and file types.



Centennial plans to add support for additional handheld operating systems in future versions of the platform, says Piwonka. "We've already had some strong feedback from customers that are happy we have delivered this release, but at the same time they want us to move forward and provide

support for additional operating systems," he notes. "We are in the process of doing the research."

Additional enhancements include support for Intel-based Apple computers, improved recognition of Layer 3 switches, and the ability to audit Win64-based machines.

The software can aid in tracking stolen equipment and in ensuring malicious programs are not placed on the network.

Centennial Software Discovery

\$26.70 per set for 500 licenses

Provides support for Windows CE so managers can better track mobile devices

(866) 355-7455

www.Processor.com/CentDiscovery



MarketPlace →



NEWS



Microsoft Alters Exchange **Licensing Plans**

MICROSOFT ADJUSTED its Exchange licensing program, changing what many had considered a controversial strategy that forced users to spend more to obtain the same features available in previous versions. Exchange 2007 originally required customers to purchase the more expensive Exchange 2007 Enterprise client access license if they wanted access to the Managed Default Folders feature for managing mailboxes. With the licensing change, those management features will now be available as part of the less-expensive standard license, although some restrictions might still make the enterprise license necessary for certain businesses.

Google Makes Vista Search Claims

GOOGLE SAYS MICROSOFT'S VISTA operating system makes it difficult for consumers to use Google Desktop and other similar desktop search software, according to a report in The Wall Street Journal. Google made the claims in a whitepaper it submitted to antitrust officials in an attempt to prove that Vista violates Microsoft's 2002 antitrust settlement with the Department of Justice. In the whitepaper, Google points out that Vista's search features work only with Microsoft's tools and that, because it's difficult to turn off Vista's indexing feature, users searching for an alternative to Vista's built-in search tools must install a second tool, which will slow down the PC.

■ EMC Leads Storage Market For Q1

ACCORDING TO A REPORT from IDC that tracked external disk storage sales during the first quarter, EMC came out on top, while IBM and HP tied for second place. EMC had \$912 million in revenue in Q1, giving the company a 21.2% market share. HP's firstquarter revenue was \$575 million for a 13.4% market share; IBM had \$545 million in revenue and a 12.7% market share. (IDC considers the companies tied because there was a less than 1% difference in their market share numbers.) Compared to the same quarter last year, HP saw a 1% drop in sales, while IBM saw a 4.8% increase in sales.

Citrix Buys Caymas

WATCH THE

CITRIX HAS PURCHASED the assets of Caymas Systems, a San Jose, Calif.,-based designer of network access control appliances for data centers. A small number of Caymas employees will move to Citrix's Application Networking Group, but Citrix will not support or further develop Caymas products. Caymas products tied together identity access control and network security policy features.

Spam Spikes On The Rise

IN A RECENT REPORT published by MessageLabs, the company says that "spam spikes" are on the rise. Spam spikes are spam blasts targeted at individual domains in an extremely aggressive manner. In one monitored spam spike, MessageLabs recorded a run of more than 10,000 messages to one domain during an 11-hour period. According to the report, "The purpose of a spam spike is to defeat appliance-based antispam systems that rely heavily on signatures, rather like desktop antivirus software." The report also showed continued growth in targeting attacks, which aim a specific piece of spam at a single recipient.

IBM To Purchase Watchfire

IBM PLANS TO ACQUIRE Waltham, Mass.,based Watchfire, a company that specializes in software for vulnerability identification in Web apps and compliance testing for sites. Although neither firm disclosed financial terms of the deal, IBM says it expects to complete the acquisition in the third quarter, pending approval from regulatory authorities. Once the merger closes, IBM says it will integrate Watchfire into its Rational division, which offers quality management software options for customers to run performance and functional testing on software they are developing. By adding Watchfire to this sector, those users will be able to add additional tests for compliance and security.

Privacy Rankings Put Google At Bottom

ACCORDING TO AN INTERIM report by Privacy International, Google was the only company of the 23 Internet firms surveyed to receive the lowest privacy ranking, "Hostile to Privacy," which Privacy International translated to "Comprehensive consumer surveillance and entrenched hostility to privacy." Privacy International said Google collects substantial amounts of user information and lacks privacy controls. None of the companies received the highest rating of "Privacy-friendly and privacy-enhancing," but a handful, including eBay and Wikipedia, scored the second-highest of "Generally privacy aware." Yahoo! and AOL both received ratings of "Substantial threat," a step above Google, while Privacy International rated

This information provides a quick glimpse of current and historical stock prices and trends for 16 major companies in the technology market.

Company	Symbol	Year Ago	June 6 \$	June 13 \$	% change from previous week
Avaya	AV	\$11.58	\$17.01	\$17.13	↑ 0.71%
BEA Systems	BEAS	\$13.06	\$12.74	\$13.21	▲ 3.69%
Computer Associates	CA	\$21	\$25.79	\$25.74	▼ 0.19%
Cisco Systems	CSCO	\$19.60	\$26.60	\$26.49	▼ 0.41%
Dell	DELL	\$23.84	\$27.35	\$27.26	▼ 0.33%
Electronic Data Systems	EDS	\$24.23	\$28.62	\$27.79	▼ 2.90%
Google	GOOG	\$404.22	\$518.25	\$504.70	▼ 2.61%
HP	HPQ	\$32.49	\$46.03	\$45.46	▼ 1.24%
IBM	IBM	\$77.15	\$102.41	\$103.08	▲ 0.65%
Intel	INTC	\$18.28	\$21.49	\$22.67	▲ 5.49%
McAfee	MFE	\$23.86	\$35.41	\$35	▼ 1.16%
Microsoft	MSFT	\$22.82	\$30.29	\$30.39	▲ 0.33%
Oracle	ORCL	\$14.67	\$19.35	\$19.30	▼ 0.26%
Red Hat Software	RHT	\$26.18	\$24.17	\$23.26	▼ 3.76%
Sun Microsystems	SUNW	\$4.09	\$5.02	\$4.99	▼ 0.6%
Symantec	SYMC	\$15.71	\$19.98	\$20.01	▲ 0.15%

NOTE: This information is meant for reference only and should not be used as a basis for buy/sell decisions.

Microsoft as having "Serious lapses," a step above AOL and Yahoo!.

Amendment Seeks To Restrict H-1B Use

YET ANOTHER AMENDMENT has been filed to the Senate immigration reform bill. The amendment, proposed by Sens. Bernie Sanders and Chuck Grassley, would bar the use of H-1B visas by companies that lay off workers. To receive new visas, companies that have announced mass layoffs would have to prove that overall employment would not be reduced. Companies that could be affected by the amendment include Dell, which plans to cut 10% of its workforce; Motorola, which has increased the number of layoffs this year to 4,000; and IBM, which has recently announced plans to lay off nearly 1,600 workers.

Malware Threats Still On The Rise

FOR MAY, SOPHOS' WORLDWIDE monitoring station network discovered a total of 304,000 Web pages that contained malicious code. That total broke down to an average of 9,500 new infected Web pages every day, an increase of more than 1,000 new pages each day over April's figures. In May, 65.5% of Web-based malware threats came from Iframe, which inserts malicious code in legitimate pages, while the top email-based malware threat was Sober, accounting for 29% of total email threats. Sophos also reported the top countries that hosted malware-infested Web pages in May: China hosted 53.2% of the infected pages, followed by the United States with 27.4% and Germany with 5.1%.

MIT Group Works On Wireless Power

MIT RESEARCHERS have demonstrated a wireless electricity system created to power a 60-watt light bulb from an electricity source 7 feet away. The concept, called WiTricity (for wireless electricity), uses technology similar to that found in power transformers. WiTricity consists of two copper coils: one coil is attached to a power source and uses a magnetic field to transfer power to the other coil, which then powers the device. The researchers say the concept could someday be used to power portable electronic devices such as MP3 players, cell phones, and notebook computers.

Former CA Exec Fined

AS PART OF AN AGREEMENT stemming from the \$2.2 billion accounting scandal at CA, Stephen Richards, CA's former head of sales, has been ordered to pay \$29.7 million in restitution. In April, Richards was sentenced to seven years in prison after pleading guilty to obstruction of justice, conspiracy, securities fraud, and perjury. The agreement, made between Judge I. Leo Glasser, Richards, Richards' wife, and U.S. prosecutors, was approved at a hearing in U.S. District Court for the Eastern District of New York. As a result of the same case, Sanjay Kumar, former CA chief executive, was ordered to pay \$800 million in restitution.

Companies Encourage Green Goals

DELL, GOOGLE, HP, INTEL, and Microsoft are among the participants in the Climate Savers Computing Initiative, an effort to increase the energy efficiency of computer and server power sources and spur end users to utilize power management methods. Climate Savers has developed power supply efficiency standards for PCs and servers, and it is encouraging members to adopt the standards before July 2010. The program also educates end users on how they can use the power management techniques that are included—but typically underused—on their computers. Climate Savers says these various methods combined could reduce worldwide carbon emissions from PCs by 54 million tons each year.

Upcoming IT Events

- JUNE -

Indianapolis ITEC 2007 June 27-28 Indianapolis, Ind. www.goitec.com

- JULY -

SANSFIRE 2007 July 25-August 3 Washington, D.C. www.sans.org

- AUGUST -

National Institute of Governmental Purchasing August 4-8 Hartford, Conn. www.nigp.org/Events/Forum.htm

. LinuxWorld Conference & Expo August 6-9

San Francisco, Calif. www.linuxworldexpo.com

SHARE

August 12-17 San Diego, Calif. www.share.org

. **Business & Technology Solutions Show**

August 21-22 Rosemont, III. www.btshow.org

. Gartner Financial Services Technology Summit

August 27-29 New York, N.Y. www.gartner.com/it/page.jsp?id=498092

&tab=overview Gartner Enterprise Planning & Architecture

Strategies Seminar August 28-29 New York, N.Y. www.gartner.com/2_events/conferences /epas073.jsp

- SEPTEMBER -

Enterprise Architecture 2007 September 5-7 Washington, D.C. events.fcw.com InfoSecurity September 11-12 New York, N.Y. www.infosecurityevent.com

. Data Center World Fall 2007

September 16-19 Dallas, Texas www.datacenterworld.com

Gartner Business Process Management Summit

September 17-19 Orlando, Fla. www.gartner.com/it/page.jsp?id =501307&tab=overview

Intel Developer Forum

September 18-20 San Francisco, Calif. www.intel.com/idf

Advertising Sales: Susan Miller / Grant Ossenkop Julie Lausterer / Eric Cobb / David Bartholomai Rob Downey / Blake Johnston / Joy Caldwell Matt Johns

Editorial Staff: Ronald D. Kobler / Corey Russmar Sheila Allen / Joy Martin / Rod Scher Christopher Trumble / Calvin Clinchard / Katie Sommer Michael Sweet / Katie Dolan / Raejean Brooks Nate Hoppe / Linné Ourada / Vince Cogley Ashley Kumpula / Tara Simmons / Leah Houchin Patrick Kean / Heather Hoffart / Barbara Ball Lindsy Mercer / Marty Sems / Kylee Dickey Josh Gulick / Andrew Leibman / Jennifer Johnson Nathan Lake / Blaine Flamig / Chris Dunker

Art & Design: Lesa Call / Fred Schneider Carrie Benes / Ginger Falldorf / Sonja Warner Aaron Weston / Aaron Clark / Amber Edwards Lori Garris / Jason Codr / Andria Cogley Lindsay Anker / Andy Arkwright

> Web Staff: Laura Curry Kristen Miller / Jessie Danekas

Subscriptions (800) 819-9014 (402) 479-2170

Advertising (800) 848-1478 (402) 479-2141 FAX: (402) 479-2193

Editorial Staff

131 W. Grand Drive • Lincoln, NE 68521 editor@processor.com FAX: (402) 479-2104

SIX QUICK TIPS

Cut Costs By Effectively Managing Your Printers

by David Gilbert

A LOT OF ATTENTION is given to asset management and usage monitoring when it comes to computers and network equipment, but there is another area altogether that accounts for a surprising amount of expenses in the SME: printers. The amount of investment in printer assets can rival telecommunications infrastructure and other high-profile hardware expenditures, yet the administration of these resources is often not given much thought after implementation. Research by Gartner indicates that as much as a 30% reduction of printing costs can be achieved in a few years by implementing improved management practices. Here are a few tips on how to streamline your printing operations and cut costs by effectively managing your printers.

Utilize IPP For Microsoft Windows Server 2003

The IPP (Internet Printing Protocol) 1.0 specification makes provisions for printing remotely over HTTP and creating a means of remote management over the Web for your Microsoft Windows Server 2003 Print Servers (www.microsoft.com). Microsoft has published a technical resource on IPP, which is available for download at www.microsoft.com/windowsserver2003/techinfo/overview/internetprint.mspx.

This document describes in detail how to enable these functions. As an added tip to increase performance of your Windows Print Server, it is recommended that you change the location of the spooler to a different physical hard drive than what the main OS files use. This eliminates resource contention between the Windows System files and the print spooler. Remember that merely using a different partition on the same hard drive will not accomplish the same result—you will

need at least two hard drives in your server to implement this tip. For a large organization with a high number of printers and a very active spool, you can also use a RAID array for the spooler to handle the load.

The software to use IPP comes with the Windows Server 2003 Operating System software off the shelf and is a handy tool for increasing the reach and capabilities of your Windows Print Server.

Identify Your Inventory Of Local & Networked Printers

Sometimes the right tool for the job is a third-party software product that will detect, monitor, and manage your printer assets. Printelligence Enterprise v3.0 by Preo Software (www.preosoftware.com) fills the bill and has additional capabilities to boot. It is easy to deploy and contains useful features, such as rules-based print management, meta-rules, and rules-based analytics, to help IT staff stay on top of printer activity. The software is also exceptionally robust, due to its decoupled architecture. This means print jobs don't have to go through any one particular print server, eliminating single points of failure. Its biggest claim to fame when it comes to identifying inventory, however, is its auto-discovery of printing devices and servers. After all, you can't manage what you can't see.

Use The Right Size & Type Of Printer For Your Organization's Needs

Having the right tool for the job is also important in managing the costs associated with your enterprise's print devices. Brian Anderson, vice president of sales and marketing at Netaphor Software (www .netaphor.com), says the company's Site-Audit product can address this crucial requirement. "Site-Audit is the only solution I know of that provides utilization analytics

and print volume tracking in terms of trend analysis, lifetime printer counts, fax, scan, color, monochrome, copy, and email tracking," he says. "By providing an analysis of utilization and different counts, customers can decide on the most cost-efficient printer deployment." This gives IT personnel the ability to prevent overspending and procuring too much capacity for their organizations' needs.

Estimate Your Costs To See Where Improvements Are Needed

HP (www.hp.com), a leading authority on printer management, has developed the HP Printing And Imaging Assessment Tool. The cost estimation tool can be accessed free online at h30194.www3.hp.com/index.aspx ?topiccode=entipg.

To address the plethora of issues that may be brought to light by the cost estimator tool, HP offers what it calls TPM (Total Print Management). The HP Web site describes TPM as its "integrated, scalable solution of intelligent network devices, software, supplies, and services that optimizes and proactively manages the entire imaging and printing infrastructure to reduce costs by up to 30%, while improving productivity and asset utilization." For example, HP suggests that an enterprise may benefit from TPM if its printer-related help desk calls are more than 15% of the total volume.

Best Return On Investment: Keep An Eye On The Cost Of Printing Supplies

Pharos Systems (www.pharos.com), a company with more than 13 years of experience, published a thoroughly researched whitepaper that covers topics such as cost management and cost recovery for print devices in the enterprise. This paper contains a great deal of information that should prove to be valuable to IT managers, and one of the main tips is to consider the cost of printing supplies when calculating TCO for your printer assets. The results of

Pharos Systems' research demonstrate that expensive-to-run desktop inkjet printers and nonstandardized equipment can drain the supply budget by needing frequent cartridge changes and requiring a wide range of cartridge types on hand to feed demand. Pharos recommends avoiding this variation of overcapacity by not purchasing low-cost individual desktop printers in large numbers because the cost of supplying them and supporting them rises quickly.

Easiest To Implement: Select The Best Printer Drivers For Your Microsoft Windows 2003 Print Server

If you are using the Print Server functions integrated with the Microsoft Windows Server 2003 Operating System, you can get more out of your setup by choosing the right drivers for your particular application. According to Microsoft (www.microsoft.com), "the printer drivers that you select to run on your Windows 2003 print server can have a great impact on its performance, reliability, and scalability." By using

drivers that make your system happy, you will have fewer crashes. This frees up IT staff by reducing printer-related service calls. In general, you should stick with user-mode drivers, Post-Script drivers, Unidrv-based drivers, and drivers with the Designed for Windows logo (aka signed drivers). You should avoid kernel-mode drivers, monolithic drivers (neither Unidrv-based nor PostScript driver), and unsigned drivers.

PROCESSOR.COM

Search Our Complete Editorial Archive Online

When you want to get up to date with what's happening in a certain area or need to research a particular product or technology, be sure to search through our complete archive of articles online at www.Processor.com.

On the Processor.com home page, you'll see a Cover Articles section near the middle of the page. In the box, you'll see links to the two articles that appeared on the cover of the most recent print issue, along with links to see the full issue either in an online table of contents format or as a PDF.

If you know the topic you need more information on, the most helpful area is our Article Search page, which you can access by clicking the Search Past Articles link from the Cover Articles section on the Processor.com home page.

Once the Article Search page appears, enter a keyword or phrase in the text entry box. Choose whether you want the resulting articles to include all, any, or an exact match of your keywords. Click Search. You'll see a list of results sorted by relevance. To see the most recent articles first, click the link to Sort Results By Date. Articles are listed showing the article title, issue date, and a brief synopsis. When you find an article of interest,

simply click the article title link. If your search results in too many matches, or if you don't find the information you're looking for, try searching again using different keywords. Searches on our site work best when you can enter a small number of specific keywords.

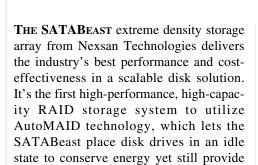
The Article Search page also includes links to This Week's Issue, Browse All Issues, and Browse All Articles. Click the This Week's Issue link to see an online table of contents page with links to all the articles in the most recent issue. Back at the Article Search page, you can click Browse All Issues to see a list of all the issues we've printed with editorial, in chronological order. This is handy when you know what issue the article appeared in. The Browse All Articles link lets you search for articles that appeared during a specific time frame. There are two options: Show All Articles From The Latest Issue or Search For Articles Between Dates. Select the option you want and, if applicable, enter a date range. Click Search.



We're constantly striving to improve our tools. If you have any suggestions for mproving our Web site or can't find the information you're looking for, send ar email to editor@processor.com or give us a call at (800) 544-1264. **STORAGE**

Maximize Your Storage Investment

Nexsan SATABeast Sets New Standards For Performance & Efficiency



near-instantaneous access to data-the



SATABeast lets you access data up to 500 times faster than tape libraries and 20 times faster than other MAID systems.

The SATABeast can scale up to 305TB in a single rack (up to 42 SATA drives in a 4U chassis). It includes single or dual-redundant RAID controllers with FC and iSCSI connectivity, up to 2GB cache per controller, two redundant power supplies, and support for multiple RAID sets and volumes per set.

Other features include:

- The latest high-capacity SATA drives
- OS-independent architecture
- More than 700MBps throughput
- Redundant, hot-swappable components
- RAID levels 0, 1, 1+0, 4, 5, and 6

The SATABeast is ideal for:

Primary storage. Fast wire-speed read/ write throughput and high IOPS performance—perfect for data-intensive apps.

D2D backup. Provides the speed, fault tolerance, and availability to deliver superior disk-based backup with a smaller footprint and less cost than tape libraries.

Secondary storage. Enterprise-class features and performance enable large file repositories to be stored on a single system. SATABeast requires no drivers and easily integrates into existing infrastructures.

Online archive. The unmatched capacity of the SATABeast easily handles enormous volumes of files. With its energy-saving AutoMAID technology, SATABeast enables massive archives to be cost-effectively stored and instantly accessed.

JUNE 22, 2007

The industry's most complete and cost-effective high-capacity storage system, with up to 305TB in a single rack

(866) 463-9726

www.Processor.com/Nexsan



COMPONENTS

May 25, 2007

More Bandwidth, **Decreased CPU Loads**

Mellanox ConnectX EN Ethernet NICs Ideal For Performance-Driven Server & Storage Needs

MELLANOX CONNECTX EN Ethernet NICs deliver high-bandwidth and industry-leading 10 Gigabit Ethernet connectivity with stateless offloads for performance-driven server and storage applications in high-performance computing and enterprise data center environments. Web infrastructure and IP video servers are two applications that will achieve significant throughput improvements resulting in faster access and increased number of users per server.

ConnectX EN improves network performance by increasing available band-

width while decreasing the associated transport load on the CPU and providing enhanced performance, especially in virtualized server environments.

ConnectX EN removes I/O bottlenecks that limit application performance. Hardware-based stateless offload engines handle the TCP/UDP/IP segmentation,

reassembly, and checksum calculations that would otherwise burden the host process. TCO is optimized by maintaining an end-toend Ethernet network on existing OSes and applications.

> The dual-port 10GBASE-CX4 adapter enables connectivity over 20+ meters of copper cables satisfying inrack and rack-to-rack connections. For longer distances, single- and dual-port

10GBASE-SR adapters support up to 300 meters over multimode fiber, while the 10GBASE-LR adapters support up to 10km over single-mode fiber. Both fiber adapters use XFP modules provided by Mellanox.

Benefits

• I/O consolidation

- 10 Gigabit full duplex bandwidth
- Virtualization acceleration
- · High-performance networking and storage access

Increases available bandwidth and provides enhanced performance, especially in virtualized server environments

(408) 970-3400

www.Processor.com/ConnectX-EN-Card



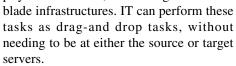
NETWORK & SYSTEMS MGMT.

JUNE 22, 2007

Server Portability/Recovery Solution Now Even More Flexible

PlateSpin Adds Block Mode To PowerConvert Workload Transfers

PLATESPIN'S PowerConvert workload portability solution lets companies stream x86 server workloads via network among virtual hosts, image and backup archives, and physical servers, including





"PowerConvert can be used for four major types of activities: workload profiling, protection, provisioning, and relocation," says Cadman Chui, vice president of marketing.

Chui says, "We have companies virtualizing and doing hardware migrations over the wide-area network for thousands of servers. We do more than just P2V (Physical To Virtual) conversions,

adds Chui. "We connect the source and target directly, for disaster recovery, image restore, and physical flexibility."

PowerConvert version 6.6 includes several new workload protection features. "The most important feature we have added is high-speed block-level replication; only the portion of a file that has changed is replicated," says Chui. "We originally used just file-based replication. Block-level transfer is ideal for synchronizing larger database servers, like email and SQL. Block-level also enables efficient offsite transfers, enhancing PlateSpin's data protection and disaster recovery capabilities."

Server Sync lets users perform incremental transfers to a server workload without having to first do a full PowerConvert server conversion. By separating full and incremental transfers, PowerConvert users have

more flexibility in file-based transfers, PlateSpin has also added new wizards for common tasks, Easy Job Configuration, and an updated drag-and-drop interface.

\$200 per workload migration

Adding block-mode replication enhances PowerConvert's data protection and disaster recovery for email and other large databases

(416) 203-6565

www.Processor.com/PowerConvert



NETWORK & SYSTEMS MGMT.

JUNE 22, 2007

Remove The Hassle From Wireless Device Configuration

eXpress Config Enables Faster Mobile Deployments

TRADITIONALLY, CONFIGURATION support tools for mobile devices required system administrators to duplicate their efforts for each type of mobile computer they used. Manually configuring every machine individually is both tedious and time consuming, and it becomes more and more costly as the number of devices mushrooms.

As a result, remote management products are typically deployed to allow a single administrator to push software and configuration updates to every wireless device within a global network from the comfort of their desks. One example is Wavelink Avalanche by Wavelink.

For users of LXE mobile devices already deploying Wavelink Avalanche, LXE has released eXpress Config. LXE has more than 37 years of experience developing rugged wireless data collection computers and RF data networks for inventory control in warehouses, distribution centers, ports,

and other harsh environments. Products and services include handheld, vehiclemount, and wearable data collection computers; advanced auto-identification technologies; RF networks; productivity tools; site surveys; and award-winning support.

LXE has leveraged its knowledge of its own devices to provide a simpler and more intuitive configuration interface. With eXpress Config, administrators can set security parameters, map function keys, and control power management and what apps open at startup, all without leaving their desks.

"Other products provide generic management capabilities," says Hank Stephens, senior product manager at LXE. "To configure a device or an application, the IT admin has to dig into the device registry, discover the registry key name, discover the valid key values, and set the key to a proper value.

Our customers need a tool like eXpress Config to make remote management as practical and economical as possible."

With eXpress Config, configuration packages are built one time only and are then broadcast to any and all LXE computers.

Starts at \$695 for up to 100 managed clients

Simplifies the task of managing LXE's mobile computers, saving the device administrator 10 to 30 minutes per device to make configuration changes

(800) 664-4593

www.Processor.com/Config





ASA COMPUTERS

Want your business to be more productive?
The ASA Servers powered by the Dual Care Xean processor provide the quality and dependability to keep up with your growing business.
Hardware Systems For The Open Source Community-since 1989

(Linux, FreeBSD, NetBSD, OpenBSD, Solaris, MS, etc.)

Product Feature

- -Rack solid quality rackmount system with excellent cooling. -Custom OS including Linux, Solaris*BSD, MS Windows, Suse, Debian, etc.
- -Hardware and software RAID storage.
- -High density cluster nodes.
- -SATA-SCSI-SAS-Fiber Raid.
- -iSCSI and NAS storage appliances.
- -High end custom workstations.
- -On-site warranty support for most of our products.

1U Dempsey/Woodcrest Storage server Stand at-\$1,841

- -1TB Storage installed. Max-3TB.
- -Intel Dual core 5030 CPU (Qty-1), Max-2 CPUs.
- -1GB 667MGz FBDIMMs installed.
- -Supports 16GB FBDIMM.
- -4X250GB htswp SATA-II Drives installed.
- -4 port SATA-II RAID controller.
- -2X10/100/1000 LAN onboard.



2U Dempsey/Woodcrest Storage server Stand at-\$3,891



- -3TB Storage installed. Max-9TB.
- -Intel Dual core 5050 CPU (Qty-1), Max-2 CPUs.
- -1GB 667MGz FBDIMMs installed.
- -Supports 16GB FBDIMM.
- -12X250GB htswp SATA-II Drives installed.
- -12 port SATA-II RAID controller
- -2X10/100/1000 LAN onboard.
- -500W Red PS.

3U Dempsey/Woodcrest Storage server Stand at-\$4,191

- -4TB Storage installed. Max-12TB.
- -Intel Dual core 5050 CPU.
- -1GB 667MGz FBDIMMs installed.
- -Supports 16GB FBDIMM.
- -16X250GB htswp SATA-II Drives installed.
- -16 port SATA-II RAID controller.
- -2X10/100/1000 LAN onboard.
- -800W Red PS.

5U Dempsey/Woodcrest Storage server Stand at-\$6,991



- -6TB Storage installed. Max-18TB.
- -Intel Dual core 5050 CPU.
- -5GB 667MGz FBDIMMs installed.
- -Supports 16GB FBDIMM.
- -24X250GB htswap SATA-II Drives installed.
- -24 port SATA-II RAID. CARD/BBU.
- -2X10/100/1000 LAN onboard.
- -930W Red PS.

Custom OEM Solution

- -Custom chassis design per your needs for your appliances.
- -Custom logo printing.
- -Facilitating in getting various certifications like FCC/UL/CE, etc.
- -Custom installation of your images.
- -Drop ship on your behalf.

Technical Expertise

We have a highly qualified technical and engineering team consisting of Redhat, BSD, MCSE, CCNA and CNE certified engineers. They are dedicated to address any questions you may have with our hardware products. Our sales engineers are experts in providing you solutions that suit your needs while keeping your budget low.

8U Dempsey/Woodcrest Storage server Stand at-\$11,441

- -10TB Storage installed. Max-30TB.
- -Intel Dual core 5050 CPU.
- -Quantity 42 installed.
- -1GB 667MGZ FBDIMMs.
- -Supports 32GB FBDIMM.
- -40X250GB htswap SATA-II Drives installed.
- -2X12 Port SATA-II Multilane RAID controller.
- -1X16 Port SATA-II Multilane RAID controller.
- -2X10/100/1000 LAN onboard.
- -1300W Red PS.



Why Do Business With ASA?

Since 1989, ASA has served customers like Cisco, Juniper, Caltech, Fermilab and most Universities. We provide total custom solutions with OS of your choice. Excellent pre-sales and post-sales support. Reliable hardware at most competitive prices. Please call or contact us for your next hardware purchase.

1-800-REAL-PCS



STORAGE June 22, 2007 PHYS

Multi-Interface Connectivity In New RAID Products

Combo-RAID CR Lets Users Choose Their Data Protection



THE COMBO-RAID CR series is a new product line of four-disk, FireWire800-based RAID products from Enhance Technology available in dense rackmount and desktop models. This new line of RAID products includes quad-interface connectivity, including FireWire800, FireWire400, USB 2.0, and eSATA.

The R4 CR1000 1U rackmount system is designed specifically to meet storage and reliability issues of video surveillance projects that work with high-resolution digital media recording. The R4 CR1000 uses the same RAID technology that Enhance Technology's flagship storage arrays use, thus providing more reliability, data integrity, and performance. The system also includes a user-selectable RAID controller, providing access to quick configuration modes, including RAID 0 for performance or redundant RAID 5 protection.

The R4 CR1000 handles up to 80MBps with disk support for SATA I and II, and the storage system supports more than 2TB capacity via eSATA on Windows Server 2003 or Windows Vista. Currently, the FireWire or USB connection supports less than 2TB capacity.

A control panel offers complete real-time control over the system, including RAID settings and drive status and user-selectable data protection. The unit houses four SATA drives and includes an integrated OS.

This series offers flexibility for SMEs with ever-evolving enterprise storage and connectivity requirements. The quad-interface connectivity is a draw for this product line as it means your SME can plug one of these devices into any number of enterprise storage scenarios, whether they are an ad hoc or long-term requirement.

The new line benefits from the same RAID technology as the company's flagship storage arrays, providing greater reliability and data integrity. This product line offers capacity, performance, and redundancy options not available in standard, commercial off-the-shelf FireWire drives.



PHYSICAL INFRASTRUCTURE

VISTA Data Center Capacity Management

Aperture Releases A Software Add-on To Measure Consumption & Forecast Needs

DATA CENTER MANAGERS have their work cut out for them when it comes to planning for requirements in floor space, rack space, power, and cooling. The amount of time required to acquire new capacity for a data center can be excessive, and therefore planning is crucial for preventing outages and continuing to deliver services without overburdening existing resources.

Capacity management and planning is important to organizations because of the potential for saving money by increasing the efficiency of their operations. If there is too much capacity available to the data center, expenditures and maintenance will be too high. If there is not enough capacity to the data center, outages may occur and downtime can result, which is also costly. Not having enough capacity can also delay the implementation of new systems and cause schedule problems or failure to meet service level agreements.

Aperture, which specializes in software for managing data centers' physical infrastructure, has released a new software plug-in for its VISTA product, which is a complete data center infrastructure resource management system. Data center managers can now take a proactive stance toward capacity planning because the software gives them the ability to forecast the needs of the data center well in advance.

By taking advantage of the usage forecasting capabilities of the VISTA software, users can also save money by avoiding hazards such as the need for temporary solutions to capacity shortages (leasing space at another facility, for instance). They can forecast when key data center resources will run out, so they can plan ahead and minimize or prevent disruptions. In addition to forecasting future needs based on historical usage, users also have the ability to model planned projects and see their potential impact on existing infrastructure. Users can also allocate capacity within the data center to configurable units for budgeting purposes, which gives an added degree of flexibility.

May 25, 2007

VISTA is the first full-function capacity management tool. Developed with input from Aperture's Fortune 100 customers, it lets data centers adapt quickly to changing demands and run more efficiently.

Aperture Technologies VISTA Capacity Management

Starts around \$30,000

Helps data center managers track and manage capacity at greater levels of detail

(203) 357-0800

www.Processor.com/ApertureVISTA

← Aperture Changing the Way Companies Run Their Data Centers

We've Changed Have You Noticed?

If you're in the market for data center equipment, you need to make Processor.com your first stop.

The New All-In-One search at Processor.com makes it easy to:

- Find product information
- Research and compare related products in a category
- Read editorial reviews and articles related to a topic
- Enter keywords to search for product information
- Send an email to a product manufacturer, link to the manufacturer's Web site for additional product information, or find a phone number to call

All with JUST ONE CLICK!

Go Online To: www.Processor.com today!

PROCESSOR.com®



Strategies For Green Computing

Be Kind To Mother Nature & IT Budgets By Employing Energy-Saving Computing

by Elizabeth Millard

POWER NEEDS ARE CONTINUALLY at the top of every data center manager's list of discussion topics because high-level equipment such as blade servers have significantly increased power consumption, and even client PCs can be an energy drain.

As machines get more powerful, requiring more cooling and therefore more electricity, the trend toward increased energy use is likely to continue. Already, U.S. data centers consume as much power in a year as is generated by five power plants, and energy consumption by data centers worldwide has doubled from 2000 to 2005, according to a study commissioned by AMD.

The situation is leading many data center managers to at least start examining how they can implement "green" strategies in their enterprises, from installing energy-efficient cooling systems to choosing products to setting policies for long-term energy use. Here are some strategies that experts believe can help data centers get in a green mood.

Think Of Heating As Well As Cooling

Cooling down hot equipment is imperative to keep it running properly, but some data centers are less adept at channeling hot air out of the room efficiently, says Chris Crosby, senior vice president of sales and technical services at Digital Realty Trust (www.digitalrealtytrust.com), a developer and operator of data centers.

Big Blue Goes Green

In May, IBM (www.ibm.com) rolled out Project Big Green, an initiative designed to cut energy consumption in corporate data centers, and the company noted it would be devoting about \$1 billion per year to increase the level of energy efficiency in IT operations. The plan brings together a "green team" of more than 850 energy efficiency architects from across IBM, who will help clients that have difficulty growing because of energy constraints and costs.

The extensive initiative is very much a sign of the times when it comes to technology providers. HP (www.hp.com) already has a Green Technologies program that centers on boosting more energy-efficient design in its products, and Apple (www.apple.com) recently noted that it would be greening up its operations by removing toxic chemicals such as lead and mercury from its products and more aggressively recycling old products.

KVM & CONSOLE ACCESS

"Much of the green impact has to do with different types of heat rejection," he says. "As centers scale up, that's a strategy that doesn't get as much attention as it should."

Consider Managed Services

For SMEs in particular, trying to maintain an efficient data center can be a challenge, Crosby notes. Not only are there some centers in older buildings that aren't equipped

for cooling and heating vents, but they also may have power setups that aren't channeling electricity to a center in the most efficient way.

"Many of our smaller clients can gain efficiencies of scale if they go into larger facilities, like a managed data center environment," Crosby says.

If there's not at least 1 megawatt per load, managers should be considering a managed strategy. "Office buildings just don't lend themselves well to efficient design of data centers," Crosby notes. With a managed play, efficiencies can be gained from the pool of clients, rather than several companies attempting to run data centers independently.

Think Like A Data Center Designer

Many SMEs and larger companies alike tend to think of a long-term vision for their centers and build around what they consider to be mission-critical equipment or applications, according to Crosby. But the approach of a 10-year vision centered on those elements can create a great deal of waste along the way, he believes. "Data centers don't ramp well one rack at a time," he says.

Especially challenging is designing a center around 5% of a company's applications, he adds, such as the ERP or CRM systems that might need high-density computing. "Bigger clients make this mistake as well," he says. "It happens a lot, and it leads to overkill and inefficient design. It's not an easy decision to understand the trade-offs from a facility perspective, but it increases efficiency."

Digital Realty Trust prefers a "pod architecture" approach that will increase data center size gradually around different

central core components, such as a generator or transformers.

Be Critical Of Your Center

Outfitting a center to be more efficient is similar to making a house a better consumer of energy, notes Eric Birch, an executive vice president at Degree Controls, the parent company of AdaptivCool (www.fix mydatacentercooling.com), developer of a system that can intelligently manage airflow in data centers.

"With your house, think about the basics, like heating and air conditioning, but also

provisioning and other 3PAR thin technologies are reducing disk capacity and the associated carbon footprint by about 60%, says Craig Nunes, 3PAR vice president of marketing. (For information on saving energy with client PCs, see "Powering Down The Client" in this issue.)

"The conversation about green strategies and carbon footprints are occurring at the corporate level," says Nunes. "Data center managers need to find a way to take those discussions and turn them into reality while staying within a budget. The strategy for going green should be in-line with business

objectives and not put a burden on the end user."

In addition to cooling and power, airflow management is important. Products such as the AdaptivCool system can eliminate hot spots and boost energy efficiency. The focus of the system is to manage the flow of cooling air to IT racks and exhaust hot air backward. The system automatically compensates minute-by-minute for changes.

Become A Joiner

Also helpful is to stay informed about the issue through groups such as The Green Grid, a consortium of IT companies and professionals that is focused on lowering the overall consumption of data centers. The organization is attempting to develop platform-neutral standards, measurement methods, processes, and new technologies that will improve energy efficiency.

A high-level membership to the group is pricey at \$25,000, but SMEs may want to consider a general membership for \$5,000, which lets them not only vote in meetings and stay abreast of energy issues but also access documentation and technical support that include design guidelines, specifications, and test suites.

It may not always be easy to go green, especially with the daily challenges and advances in technology that make so many managers feel like they can barely keep up with the newest server on the block. But some focus on the issue does pay off, both in lower energy costs and a happier Earth.

"There's starting to be good awareness about our energy demands and what they're doing from an environmental perspective," says Nunes. "We have a long way to go before every data center is energy efficient, but the issue is resonating in every industry, and these are conversations worth having."



says. "If you look at a data center today, the typical center has a raised floor with cables underneath. So, how big of a hole have you cut? And how are you managing the airflow through that?"

checking walls, chimneys, and doors," he

The locations of cooling systems and vents are important, but also worth going over with a critical eye are cable trays, racks, and other infrastructure elements.

Get Informed About Green Options

With data centers looking for greener strategies, it's not surprising that so many vendors are developing products that will fit in well with reduced energy consumption directives.

For example, 3PAR (www.Processor.com /3PARdata) has developed a Carbon Neutral Storage Program that brings together thin technology such as provisioning, virtual copying, and remote copying. Thin

JUNE 15, 2007

KVM Just Got Better

ATEN Introduces IPMI-Capable KVM Switch



THE ABILITY TO CONTROL servers remotely through KVM switches has liberated countless data center managers from their server rooms. But the ability to gauge the physical well being of network servers is not something that KVM switches typically do.

However, ATEN International's new KH98 Health Manager KVM Switch is designed not only to manage systems but

also to monitor such physical issues as server fan speed, voltage levels, and CPU temperature remotely using a PS/2 console.

According ATEN, the KH98 is the first KVM switch that provides users with IPMI (Intelligent Platform Management Interface) 2.0 capabilities. IPMI enables users to check on a number of physical issues on as many as eight compatible servers.

In addition to its monitoring functionality, the KH98 enables users to reset and power off and on systems remotely and to hot swap servers without having to power down. It also offers administrator and user password authorization, the ability to manage servers using a combination of front panel switches, hotkeys, on-screen display menus, and an auto scan mode that provides for uninterrupted tracking of user-selected servers.

The KH98 can be used with a variety of operating systems, including Microsoft DOS 6.2 and higher, Microsoft Windows NT 4 and higher, Red Hat Linux 6.0 and higher, SUSE Linux 8.2 and higher, Novell NetWare 5.0 and higher, IBM AIX 4.3 and higher, and any version of IBM OS/2 Warp.

If users want to monitor more than eight servers, up to 73 KH98 boxes may be linked to monitor up to 512 computers from a single console through efficient cascading technology. At the same time, an ATEN product executive says that the KH98 would be an ideal product for the SME space. The health monitoring of servers, no matter how many

are in service, he says, is vital to SME organizations because they, too, rely on email, data processing, and storage, among other things, to run their businesses.

ATEN KH98 Health Manager KVM Switch

\$499.95 per unit

Provides users with an IPMI-supported KVM switch that can both manage servers remotely and monitor these servers' physical conditions

(949) 428-1111

www.Processor.com/ATEN



Green Computing In The Data Center

Continued from Page 1 Council's EPEAT (electronic product environmental assessment tool) Program, says IT managers are gradually recognizing that every single purchase they make has hidden human health and environmental impacts. "With electronic products," Case notes, "these impacts range from the hazardous materials used to manufacture them to the electricity they consume when they are used. Computers and other office electronics, for example, consume 74 billion kilowatt-hours of electricity per year, equivalent to the annual electricity consumption of 7 million households. Since most electricity in this country is generated by highly polluting coal-fired power plants, computers are actually a significant conIn addition, Case says some of the hazardous materials used to manufacture computers, such as brominated flame retardants, are being found in growing concentrations in human blood streams and breast milk. The consequences of these discoveries are unknown.

SMEs, Listen Up

Jim Pappas, representing Intel (www intel.com) as a board member of The Green Grid, says small to midsized enterprises should really care about the green computing concept. Pappas explains, "Energy efficiency in data centers is an issue for companies of all sizes, including small to midsized enterprises. Higher energy costs are here to stay, and SMBs often can make a significant dent in energy bills with even a few small

Three Good Reasons To Go Green

Richard Hodges, principal of GreenIT (www .greenit.net), says SMEs need to be concerned with "Green Computing" for three reasons:

tributor to global warming."

Money. Any organization can reduce costs by making IT systems more efficient: using less electricity, designing systems for longer useful lives, reducing the amount of equipment purchased (and supported), and reducing the amount of waste produced saves money and has a positive environmental benefit (the GreenIT ER3 Principle: Eliminate, Reduce, Reuse, Recycle).

Risk. Electricity supplies are less reliable, and prices are rising. Many governments now have

strict rules on the management of e-waste and u-waste (universal waste), and data on improperly handled "surplus" devices is a potential security disaster. These are examples of risks that IT managers face that must be managed, even in SMEs.

Social responsibility. The issue of environmental sustainability will be a major and enduring trend for the foreseeable future. Customers of every enterprise will become more and more aware of what their suppliers are doing and not doing. SMEs selling to large global enterprises will rapidly find themselves compelled to meet rising standards for environmental responsibility throughout the supply chain.

changes to processes and technologies in the data center." He says The Green Grid's goal is to help develop meaningful standards, measurements, and technologies to help companies of every size reduce power consumption and achieve data center efficiency.

Case agrees that SMEs should pay attention to the concept of green computing.

2006, actually includes more than 51 environmental criteria. Energy efficiency is just one of the criteria." Case adds that EPEAT is an easy-to-use purchasing tool that identifies green computer desktops, laptops, and monitors. He says products must meet 23 mandatory criteria to achieve EPEAT Bronze, the lowest EPEAT tier. "Products

"SMBs often can make a significant dent in energy bills with even a few small changes to processes and technologies in the data center."

- Intel's Jim Pappas

"As reported in cover stories from *The Wall Street Journal*, *Forbes*, *Time*, *Newsweek*, and even *Soap Opera Digest*, individuals and businesses are recognizing that everyone has a responsibility and an interest in preventing environmental catastrophe, whether it be global warming or growing piles of hazardous electronic products. Many businesses are also discovering that it makes financial sense," he says.

Case says green companies are finding it is easier to hire and retain highly skilled workers. He says green companies also tend to outperform other companies. "In fact," he notes, "many financial analysts are using a company's environmental responsibility as a proxy for evaluating strong executive leadership. In the short term, green products save money by reducing energy costs. In the long run, they can save a lot more than money."

According to Case, many people are talking about green computers, but many people focus almost exclusively on energy efficiency as if that is the only environmental impact. Case comments, "EPEAT, the green computer standard unveiled in July

that meet additional optional criteria can earn EPEAT Silver or EPEAT Gold status," he notes.

Case says based on very preliminary estimates and conservative assumptions, EPEAT-registered products during the next five years will save more than 13 million pounds of hazardous waste, 3 million pounds of nonhazardous waste, and nearly 600,000 megawatt-hours of energy.

Hodges says "green computing" is an opportunity for IT professionals to take a leadership role and demonstrate the central role of IT to the enterprise. "First, don't wait for them to come to you. Get your own house in order with a plan for efficiency and eco-responsibility in IT. Then, show how IT can lead the way in reducing the environmental impacts of the enterprise in every area, including facilities (less, more-efficient building space; lower power bills; less tonnage of waste going to the dump), operations (improved employee productivity and accountability with less travel), and travel costs (fewer airplane trips)." He says, ultimately, greening the products and services the company sells is a goal IT professionals should set for themselves.

Solving VoIP Problems

Continued from Page 1 expectations of the digital world." Users will redefine "acceptable" and "typical."

Messer says a good place to start any VoIP project is with a baseline network study. "Then implement some level of QoS," he says. "There is no one, single, best way to do it—VoIP requires a lot of customization." But the baseline study is

VoIP Doubles Worldwide

VoIP subscriber numbers worldwide more than doubled last year, from 19 million to 40 million, according to the latest research from Point Topic. John Bosnell, senior analyst at the research firm, says Japan led the pack at the end of 2006 with 13.75 million VoIP subscribers. The United States followed with 8.9 million subscribers, and France was third with 6.6 million

"If you add in the PC-to-phone and PC-to-PC clients like Skype, we estimate the global number is over 50 million regular VoIP users," Bosnell says. The company's statistics do not include calls carried over an IP-VPN from one business site to another site of the same business.

One factor holding back VoIP deployment in many countries is the regulatory climate, even in advanced countries. Bosnell says, "For example, VoIP is regulated in a variety of ways in the developed world. Many countries, such as Japan, the USA, France, and Sweden, have adopted a liberal approach; some countries continue to consult on how best to regulate it, and VoIP is even illegal in some developing countries."

vital; some vendors will not install VoIP equipment without it.

Making It Work

Messer says VoIP typically works better in a smaller organization. Banks, for example, put VoIP into their branches but reserve the more reliable PBX-based services for vital functions such as the customer call center at headquarters.

Many VoIP problems can be controlled. Others, especially in a distributed environment, are beyond IT's scope. "If the same problem happens every day, it will affect the company's ability to do business," Messer warns.

Levonius says handling the problem of dropped calls depends on the environment. "For internal LANs, use QoS-enabled Ethernet switches," he says. "Avoid using small, unmanaged 'dumb' hubs." He also notes that a basic check to be sure LAN cables are properly wired might solve problems

For branch offices, Levonius suggests subscribing to a VPN service with SLAs (service-level agreements) from the ISP to guarantee service quality. Another fix is simple but often overlooked. "Configure your router and firewall to prioritize voice traffic," he says.

Dropped calls from remote users connecting through the public Internet are another common area of complaints. Handle that by having users subscribe to reliable, high-bandwidth services. Levonius also advises, "Use lower bit rate codecs."

All of this is predicated on understanding how to adjust bandwidth and using VoIP the right way, Messer says. He notes the success of Skype and GoogleTalk. "They are crystal clear," he says, adding that such services will change everyone's expectations of VoIP.

Smoothing The Crinkle

Another common complaint with VoIP is the annoying cellophane crinkle sound that pops up now and then. Levonius says one way to reduce that problem on an internal LAN is to make sure the local network has QoS implemented on switches and routers. "Find the source of network congestion and segment it to a different LAN if necessary," he says.

For branch offices, provision bandwidth control and make sure the overall simultaneous VoIP calls do not exceed the available bandwidth. Solving the dropped-call problem for users connecting through the public Internet often will solve the crinkly sound problem they report, too. Again, subscribing to reliable, high-bandwidth service and using a lower bit rate codec helps.

Because there is less control over QoS and bandwidth with mobile units, they are more susceptible to poor call quality. "VoIP is a real-time application where the voice must be played at precise time," Levonius notes. "Variation in network delay may affect the voice quality, and hence a jitter buffer is implemented to offer a window to accommodate network delay variations." Echo is another problem for voice quality, he adds. An echo cancellation algorithm must be used for every VoIP voice stream.

"Voice is driving the IT environment and changing the way businesses look at their IT goals," Messer says. He notes the integration of traditionally voice and traditionally data people into one group. "You no longer have silos. The network and the applications people, the WAN specialists and server teams are all working together due to VoIP."

Part of the solution is knowing what caused a problem in the first place. Network General's stream-to-disk technology called InfiniStream lets IT narrow a problem down to the offending packet that caused a call to be dropped.

AltiGen's implementation lets network administrators tag voice packets so network switches and routers can treat these packets as higher priority than regular data packets. This minimizes delay and packet loss in the networks.

Levonius says there are a host of benefits to VoIP, including simplified, consolidated wiring to the desktop. "You get more productivity features, like showing user presence, voicemail, and call center workgroup real-time status on the VoIP phone," he notes. Yet all of these benefits come with a price.

"People eventually will realize that voice is voice. It is a commodity," Messer says. The quickest technical fix is to understand what is happening with the network and its bandwidth. "Understand how to adjust bandwidth and use VoIP the right way," he continues. "Solve the problems on the back end first." That means not allowing any application to hog all of the bandwidth. Queue traffic, giving high priority to voice.

SPONSORED LINKS

AltiGen Communications AltiServ

Includes all standard PBX functionality and can support VoIP, analog, or a combination of both; the phone system is easily scaled in both size and capability

www.Processor.com/AltiServ

Fonality PBXtra Professional Edition IP-PBX
Big business phone system at a small

business price www.Processor.com/PBXtra

Ovislink GXW-410X FXO Gateway

Offers enterprises a cost-effective, easy-todeploy VoIP FXO analog gateway www.Processor.com/Ovislink

Pingtel SIPxchange CallManager

A server-based, integrated central call routing engine that also provides directory services across an enterprise VoIP network www.Processor.com/Pindtel1

Powering Down The Client

Strategies For Saving Energy On The Client Side

by Christian Perry

A TRADITIONAL, HIGH-LEVEL discussion covering power consumption in the data center inevitably focuses on the usual suspects, such as servers. But increasingly, managers are looking toward clients as prime opportunities for saving energy, and there are plenty of methods for knocking down the power they consume.

"The speed of innovation is powering an energy-efficient revolution in the computer industry," says Leslie Sobon, director of brand management at AMD (www.amd .com). "The advance of energy-efficient computing technologies means enterprises have a number of options to improve energy efficiency throughout the enterprise,

Is Thin In?

Not all energy-saving strategies focus on methods for reducing consumption in desktop and notebook PCs. In fact, some posit the idea of ditching desktops and notebooks altogether.

"Enterprises need to look at thin clients—lowpower-consumption, stateless computing devices that connect to a centralized server for hosted application and data processing," says Klaus Besier, CEO of Neoware (www .Processor.com/NeowareInc). "For a number of organizations, replacing traditional 'fat' desktop PCs with thin clients is seamless to their end users."

According to Besier, thin clients can help companies reduce desktop energy costs by up to 90%, where a thin client would consume about 30 watts of power in the same time frame in which a traditional desktop PC would consume a maximum of 280 watts. Thus, the annual power cost for 1,000 devices in an enterprise using traditional PCs using that maximum wattage would be nearly \$62,000, while the annual cost for a Neoware e90 device using a maximum wattage of 30 would be about \$6,600.

"Companies should look into running small pilots, analyze the savings to other divisions that run PCs, then present the savings analysis to upper management to justify the deployment of thin clients in other parts of the organization," Besier says.

helping them to save energy, reduce escalating energy costs, and extend the longevity of their PCs."

For some enterprises, focusing on saving energy on the client side can require a shift in philosophies, but it's not necessarily one that ultimately delivers less performance. On the contrary, today's technologies are built to blend performance with energy conservation, but making the most of that balance needs the right plan.

Put Clients To Sleep

According to Rick Brenner, principal of Chaco Canyon Consulting (www.chaco canyon.com), enterprises can divide the task of saving energy on clients into both short- and long-term goals. For the short term, he recommends configuring machines to revert to sleep mode automatically after an appropriate idle interval. However, he adds that sleep mode doesn't save as much power as using the off switch.

"Many employees can turn their machines off completely overnight and on weekends," Brenner says. "If they don't, the usual reason is the hassle of opening up the right documents and applications to get started the next day. Make this easy for them by writing—or showing them how to write—startup scripts or defining startup applications and documents."

Brenner says that these off-button strategies can help enterprises save more than 50% of their existing power consumption. This approach also requires managers to ensure that employees who are on vacation, traveling, or are otherwise absent have powered down their machines. Another of Brenner's short-term recommendations is that enterprises increasingly promote telecommuting, which he says "shifts all processor-related power consumption from the office to the employees' homes."

For the long term, he suggests that enterprises downscale their purchases of

desktop machines and instead focus on buying notebooks, keyboards, and screens. This method not only conserves energy, he says, but also preserves data in the event of a power failure. This notebook-centric focus can save enterprises about 40% of their existing power consumption, depending on configuration, and entails other benefits.



For example, employees will more likely be enticed to bring work home with them. On the downside, notebooks are far more vulnerable to theft, and PC support staff might require additional training to handle notebooks instead of desktop machines.

Focus On Software

Client technology continues to change, but it's a safe bet that multicore computing is here to stay for the long haul. However, Cory Isaacson, CEO of Rogue Wave Software (www.roguewave.com), explains that while multicore processing can save power in theory, application software must be able to take advantage of these newer technologies through concurrent processing.

"In general, it's easier to add additional hardware to solving an application performance problem, but often with fewer results than are desired, and, of course, exacerbating the power consumption cost and adverse environmental impact," Isaacson says. "By contrast, software optimization can offer dramatic performance improvements while reducing or eliminating the need for expanded power consumption."

Although Isaacson says that software optimization can require the applied exper-

tise and time of professional developers to accomplish, it can nonetheless be done today with confidence. In fact, he notes that utilizing concurrent computing designs in applications not only can reduce current hardware dependency but can forestall hardware expansion requirements—in turn decreasing power consumption.

Page 11

Process Development

For an enterprise accustomed to funneling its energysaving efforts primarily into the server side of the data center, grappling with a client-side energy plan can be a tricky endeavor. Isaacson recommends inspecting software first before automatically assuming that additional hardware is required.

"It takes a good understanding of the application code base to do this, but it's well worth the investment in the long run. If new hardware is required, developers and IT should look for opportunities at the application software level, as perhaps less hardware can do the job," Isaacson says.

Naturally, employees are an important piece of the puzzle, and AMD's Sobon says that companies can con-

vince employees to embrace and stick with energy-saving measures by sending monthly or quarterly consumption or moneysaved updates. "If employees are aware of the significant savings that can incur by simply turning off their PC at day's end, they will more than likely put in the effort to do so," she says.

However, not all experts agree that employees will buy into these measures. Chaco Canyon's Brenner says that enforcement that takes the form of exhortations intended to lead to desired results will simply not work, and neither will enforcement in the form of incentives and disincentives.

"Enforcement should take the form of restrictions on infrastructure and equipment," Brenner says. "Only when the equipment is selected with energy consumption in mind will we make lasting changes in the consumption pattern."

When it comes to IT equipment liquidation or disposal, we are serious. Let us worry about data security and destruction. EPA regulations, transportation. down time and insurance. Don't tie up your resources or take chances with

your data or environmental issues

Call DMD today! (877) 777-0651

Thanks to DMD, we don't have to sit on our old computer equipment anymore.

We Purchase:

Computers/Laptops Networking Equipment Power/Environmental Telecom/Network Complete Data Centers **Printers**

We Offer:

Asset Tracking/Reporting Deinstallation/Packing/Transport DOD Level Data/Mechanical Destruction EPA Recycling/Reuse Ongoing Support Plans Technology Refresh/Install Programs

Find out why some of the top U.S. companies and Government Agencies call DMD Systems Recovery.



DMD SYSTEMS RECOVERY, INC.

A Slightly Different Company™

Toll Free: (877) 777-0651 Phone: (602) 307-0180 Fax: (602) 307-0181

Internet: www.dmdsystems.com

Providing QUALITY GOODS and SERVICES for Industry.

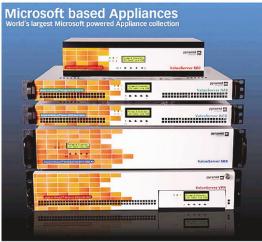
ter Business Bureau, Chamber of Commerce. HP Authorized. Member of NAID (National Association for Inform





Pyramid Computer USA www.pyramid-usa.com info@pyramid-usa.com 866-745-3553





Pyramid Computer, a leading provider of branded appliance solutions to OEMs and ISVs, now offers a complete line of Microsoft® security server and storage product appliances featuring ISA and IAG

Our cost effective OEM bundle of hardware and software provides a turn-key solution, ready to run and pre-configured for your ease of implementation.

Safely Eliminating E-waste

Are You Sure You're Really Recycling Your Computers Safely?

by Ericka Chickowski

WHERE DO OLD COMPUTERS go to die? In an ideal world, all of the dinosaurs of commercial computing wind up in the hands of responsible recyclers who reuse certain components and recycle all of the remaining scraps to be remanufactured into newer electronics.

Unfortunately, the reality is that obsolete equipment is rarely recycled in an environ-

mentally friendly manner. Instead, the majority of this equipment ends up being ferried from the United States to third-world countries, where the most expensive materials are extracted and the rest is discarded into large e-waste dumps.

A Dirty Habit

"The practice in the U.S. and virtually in the entire developed world for managing scrap electronics is to load the stuff into a shipping container and send it to a developing country where very low-cost labor is used to tear it apart and recover components and raw materials. Usually, that's done with little regard to worker safety and absolutely no regard for the environment in the local area," says Bob Houghton,

president of Redemtech. "What can't be easily recovered from the machines is simply dumped."

The difficulty is that this waste is often extremely hazardous. Computer products contain many nasty compounds, including lead, PCBs (polychlorinated biphenyl), and halogonated materials. The prevailing practice is to send these components overseas because many developing nations, such as China, Nigeria, Pakistan, Vietnam, and India, have less-restrictive environmental regulations, allowing the dumping and incineration of the developed world's e-waste. The irresponsible handling of hazardous e-waste has created mounting problems in these countries, as they've acted as the world's landfill for such materials for decades.

"It has created a tremendous amount of environmental damage, and in the areas that have a lot of this going on have created a lot of health problems . . . for reasons as easy to understand as a high lead content in the water," Houghton says.

The problem only continues to grow as business and personal use of computers and electronics continue to skyrocket and the issue of e-waste remains unnoticed. Currently, electronic waste makes up approximately 2 to 5% of the entire U.S. waste stream, and that number continues to grow. Meanwhile, businesses and individuals still rarely recycle. According to the U.S. Environmental Protection Agency, in 2001, only 11% of all computers were recycled.



And many of these so-called "recycling" businesses and programs actually only recycle a fraction of the computer and continue to send the rest to third-world nations.

"Even the folks who have what you would expect to be complete recycling, closed recycling processes where they've got big shredders and separators and a very robust capital investment in the machinery process, a lot of those folks are still taking the low-value output from their process and shipping it overseas where it can be dumped," he says, emphasizing that even many municipal recycling programs end up unwittingly sending e-waste overseas.

"What is very common practice is for the material to be sort of laundered through a series of brokers on its way to Vietnam or whatever developing country might be the case," he says. "So, if you only peel back the onion one layer, it looks like the recyclers took it from the collection event and sold it to a materials refiner in New Jersey. But what did the refiner in New Jersey do? He proba-

bly extracted a few things from it then sold it to a refiner in Atlanta, who sent it overseas."

The biggest difficulty is the fact that even though it might be morally unsound to export such hazardous materials, as long as the equipment is not dumped on U.S. soil, these companies are within their legal rights to do so.

Legal Responsibility & Social Responsibility

So, given the facts, how can a company that wishes to abide by legal rules also be socially responsible? Houghton says that it can be tough, given the "laundering" of

equipment. However, it isn't impossible. It is expensive, though.

Redemtech specializes in helping corporations, and even SMEs, recycle their equipment in a truly environmentally healthy fashion. In order to cut down on costs, Houghton suggests that businesses first think about the total life span of their equipment. In some cases he's helped businesses identify certain categories of equipment that they could expand the life span for and put off an expensive retirement process. Once the true end of life has been reached, it's a matter of potentially finding ways to reuse equipment, he says.

Reuse can happen in several ways. First, it might make sense to take stock of old equipment and figure out if it

contains components, such as memory, power supplies, and hard drives, that can be used to either repair or upgrade other existing systems. Equipment that hasn't been stripped of these parts but is still functioning might also be eligible for other forms of reuse. Certain organizations, such as TechSoup, specialize in programs that connect businesses with nonprofit organizations that accept older machines as donations for less fortunate people or even organizations that may have a need for computers. This is not only socially responsible but also a potential tax deduction.

When You Must Recycle

If an organization still must put some old systems out to pasture after this, Houghton says the most important factor is partnering with a recycling organization with a very transparent process.

His company specializes in working with downstream partners that must sign a contract of stewardship that requires them to never send materials to third-world nations for dumping. And Redemtech doesn't just rely on a partner's word.

"We've got a team of folks in an environmental management group whose responsibility it is to audit our downstream refiners. They do that on a quarterly basis—their audits include environmental, worker's safety, and a financial audit. Our refining partners are required to completely open their doors and allow our auditors complete access, so we are able to produce a very detailed chain of custody that starts when the client puts in a service request at their facility and extends all the way through our process to the end-of-life refining process," he says.

Houghton suggests that businesses look for recycling partners with a similar level of auditing capabilities to ensure that their recycled equipment is being handled in the way they wish. While it might cost more to do so, it is ensuring the future sustainability of electronic production and environmental health for all of the world's nations.

On Board With The Basel Convention

One of the reasons that the United States continues to dump e-waste on developing nations is because there are no regulations or laws preventing businesses from doing so. By ratifying the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, many developed nations have agreed to legally stop this irresponsible practice. However, the United States has chosen not to ratify Basel or to enforce similar restrictions. Businesses in the United States can still hold themselves up to Basel standards by working with recycling companies that have signed BAN's (Basel Action Network's) Electronics Recycler's Pledge of True Stewardship. Based in Seattle, BAN is a nonprofit group focused on eliminating the practice of toxic trade. While its pledge isn't as enforceable as a law, it is a start.

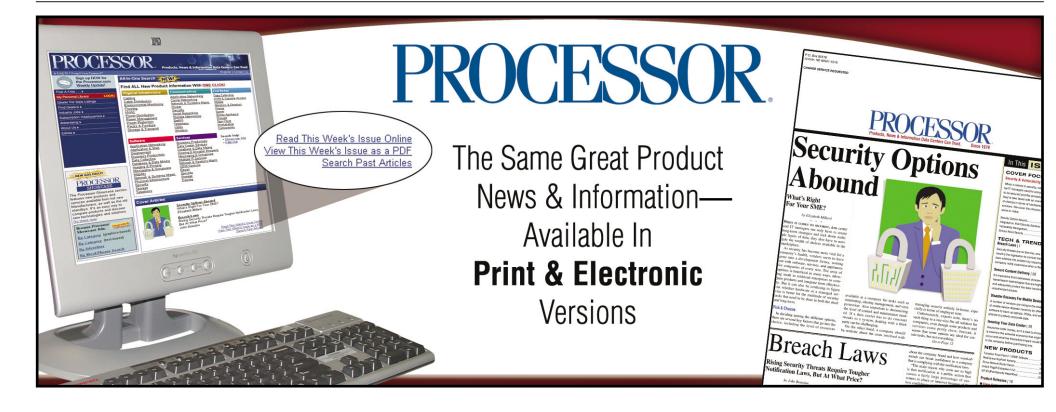
The following are some recyclers who have signed the pledge:

- Advanced Technology Recycling www.atrecycle.com
- Asset Recovery
- www.assetrecoverycorp.com
- Global Investment Recovery www.girpm.com
- Maxim Industries
- www.4scrap.com
- Redemtech www.Processor.com/Redemtech
- TechTurn

www.techturn.com

■ Total Reclaim

www.totalreclaim.com





Imagine... A Network Operations Center That Works With You.

Bridge the gap between your network and administrators with a state-of-the-art network operations center by Winsted. For more than 40 years Winsted has been creating ergonomic workspaces that are both efficient and beautiful. From custom solutions to in-stock modular consoles and everything in between, Winsted can help you create a highly-functional NOC or data center that enables efficient monitoring of your entire network. Imagine a network operations center designed to meet your every need.

Call 1.800.447.2257 for a catalog, or visit www.winsted.com/pc today.



Slim-Line Console with M-View Monitor Wall



System/85 Vertical Racks



Matrix Custom Console System



Crescent Digital Desk



Digital Desk with LCD Mounts

Get a FREE 3D Rendering of Your Client's Control Room.

Use Winsted's free, easy-to-use design software (WELS) or work with a Winsted representative to create a one-of-a-kind solution that meets your every need. Then see your vision become a reality with a FREE 3D rendering of your design.

Call 1.800.447.2257 today.





DATA CENTER SERVICES

Turn Old Equipment Into Cash

Horizon Datacom Solutions Helps Businesses Make The Most Of Their Network Hardware Investments

HORIZON DATACOM SOLUTIONS, located in Columbus, Ohio, has one specific goal: helping businesses make the most of their network hardware investment. Many businesses are faced with growing (sometimes painfully high) capital budgets, and yet they have literally stacks of switches, routers, wireless gear, and other network hardware that they have outgrown, no longer need, or don't have room for. Some businesses find that they have racks filled with decommissioned hardware, or that due to expansion or changing needs, they don't have the right equipment.

In the past, the hardware would simply sit in a spare room or corner until it was eventually hauled away and disposed of in a mass "asset recovery" that took CRT monitors, desktop computers, printers, and other e-waste and hauled it away. But this no longer has to be the case.

Horizon Datacom Solutions specializes in refurbishing network hardware and can help you recover value out of what you have. Plus, selling your equipment to us helps keep it out of a landfill, helping contribute to your corporate "green" initiatives.

Get Value From Used Equipment

Horizon Datacom helps businesses and organizations get value back from their

used equipment. Stated simply: We turn old network equipment into cash.

We are committed to refurbishing and putting that same equipment we purchase back into useful life, which provides additional value to our customers who both save money purchasing from us and get

Equipment Purchased

We buy large or small quantities of network LAN/WAN, wireless, and VoIP equipment. Or you can use it as credit to update your current infrastructure.

We buy:

- Alteon
- Foundry Networks
- Cisco
- Enterasys
- Polycom
- Extreme Networks SonicWall

If you have surplus equipment, please note quantities, description, condition, and any other notes where possible.

If you frequently upgrade your equipment or have large quantities to dispose of, let us design an asset management plan for you. We can help you increase both cash flow and return on assets by faxing or emailing your list of surplus equipment.

reliable hardware, backed by our guarantee and hard-won reputation for quality and customer service.

At Horizon Datacom Solutions, refurbishing involves much more than blowing the dust off of circuit boards. Horizon Datacom maintains a full testing lab where every piece of equipment is rigorously tested and repaired if necessary. We repaint the chassis, replace missing or broken parts, and carefully repackage the finished product. In fact, many of our customers claim the hardware they purchase from us is virtually indistinguishable from new hardware.

Horizon also offers refurbishing services for companies that want to redeploy their own gear. You simply send it in, have it tested and refurbished, then it's sent back to you, ready to deploy at new locations or for new uses.

Real-Time Inventory

Some businesses are leery about buying from the "refurb" market—some with good reasons. eBay can be a crapshoot: You may be dealing with a guy operating out of his garage, or worse, finding yourself buying counterfeit gear.

Horizon Datacom has been in business for more than 10 years. And, in 2003, we were recognized as one of the Inc 500 fastest growing businesses in America.

Businesses worldwide purchase refurbished networking equipment from Horizon Datacom.

APRIL 6, 2007

Horizon maintains a complete, real-time inventory listing on its Web site at www .horizondatacom.com. While some companies may say, "I can get that for you," when you use Horizon Datacom's online store, you can be assured that what you see online is on the shelf and ready to be shipped to you. In fact, most orders are packed and shipped the same day. And right now we're offering free FedEx ground shipping on most orders of \$100 or more within the continental United States.

Repeat Customers

Vicky Nosbisch, owner and president of Horizon Datacom Solutions, says, "I'm proud of the fact that most of our customers are repeat customers. Few things give me greater pleasure than buying network gear from a customer, seeing it arrive at our loading dock, then coming back to life in our test labs, ready to find a new home with a new customer."

And Vicky has a challenge: "Send me a list of your unused network gear. We'll show you how much it's worth, make you an offer, and help you find the network hardware you need."



Looking For Products?

Check Out The All-In-One Search At Processor.com

THE ALL-IN-ONE SEARCH AREA on our Web site, www.Processor.com, makes it easy to find detailed information on products with just one click. Simply find the product category you need (categories are sorted under five areas: Physical Infrastructure, Communications, End Nodes, Software, and Services) and click the link.

Each resulting page displays all the information regarding that product category. Information is sorted by Product Showcase (concise product listings that include product photos and a brief description), New Product Overviews (more detailed product-focused editorial articles), and Most Recent Articles (more general articles covering products and information related to that category).

If you know the specific product name or manufacturer you want to know more about, click the Showcase Ads link under

Search Only in the All-In-One Search area. There you'll find options to search By Advertiser and By Word/Phrase Search. By Advertiser lets you quickly link to all products offered by a specific manufacturer. By Word/Phrase Search lets you search for specific products, features, or other keywords.



brings up the New Product Search Results area, which lists information sorted by Showcase Ads, New Product Overviews, and Most Recent Articles.

Chenbro Micom RM21508T2B, \$385.00, WA ZNYX Networks ZX4500, \$799.00,

X Networks ZX4024R, 1,00, AZ

ls ZX212A4, ematic RSM-800

natic NPS115,



Nortel Networks Okidata

Seagate Sun Mic Toshiba Wyse

Word/Phrase Search Enter a word or phrase to search by: Fx: KVM, Storage Networking Search Cancel Search Ads By Category Home Copyright & Legal Notice Privacy Policy Site Map Contact Us Search results delivered by the Troika® system.

Use Processor.com to search for product information by keyword. From the home page, choose to Search Only Showcase Ads and then click the Word/ Phrase Search link. Enter keyword(s) and click Search to find what you need.





UltraMatrix™ Remote

Connects 1,000 computers to up to 256 user stations

- Multi-user, multi-platform KVM IP switch
- Supports PC, Sun, Apple, USB, UNIX, and serial devices
- High quality video up to 1280 x 1024
- Secure encrypted operation with login and access control
- Scaling, scrolling, and auto-size features
- View 4 computer connections using the quad-screen mode



UltraConsole™ Remote

Access servers & serial devices from anywhere in the world

- PC, SUN, UNIX, Linux, USB, and serial devices
- Supports serial devices such as routers, switches, and more
- Emulates VT100/VT220 terminals
- Secure encryption operation
- Scaling, scrolling, auto-size and quad screen features
- View 4 computer connections using the quad-screen mode



UltraLink™

Manage & monitor servers from anywhere in the world

- High-quality video up to 1280 x 1024
- Secure encrypted operation
- Scaling, scrolling, and auto-size features
- Quad screen, real-time viewing of 4 computers
- Compatible with most KVM switches
- Available in single, dual, and quad models

PC, Sun, Apple, USB, UNIX, Serial Devices



KVM Switches



UltraMatrix™ X-Series

Expandable, multi-user switch for connecting 1,000 computers

- Multi-platform units have serial VT220 terminal emulation
- Advanced visual interface (AVI)
- Security features prevent unauthorized access ■ Free lifetime upgrade of firmware
- Video resolution up to 1600 x 1280
- Multi-lingual Menu



UltraView™ Pro

Access or Manage 2 to 256 computers from a single KVM station

- Economical
- Easy to use, install, and expand
- Audio and serial support
- Advanced visual interface (AVI)
- Security features prevent unauthorized access
- Free lifetime upgrade of firmware



QuadraVista™

Display 4 computers on a single monitor

- View live, real-time data in each window
- Easily switch to and control each computer in Quad or Picture-in-Picture (PiP) mode
- Video resolution up to 1920 x 1200
- VGA and DVI video supported
- Supports USB and PS/2 computers
- On-screen menus for easy set-up

Fiber, CATx, DVI/VGA, PS/2 or USB



KVM Extenders



CrystalView[™]

Extends keyboard, video, mouse, audio and serial up to 1000 ft

- Supports USB, PS/2, or Sun
- Serial and full stereo options
- Available in single, dual, or quad video models
- Supports video resolutions up to 1600 x 1200
- Video tuning and skew adjustments available ■ Dual version allows another KVM near computer



CrysrtalView™ Pro

Extends keyboard, video, mouse, audio and serial up to 33,000 ft

- Supports DVI video resolutions up to 1920 x 1200
- Supports Fiber or CATx cable
- Supports singlemode or multimode fiber cable
- Supports PS/2 or USB keyboard and mouse
- Supports for local KVM station
- Fully automatic KVM sharing



ViewLink™

Extends keyboard, video, & mouse up to 1000' over CATx

- Automatic compensation and equalization
- Automated video skew adjustments
- Models available for PS/2, USB or both
- Video resolution up to 1600 x 1200 ■ Compatible with KVM switches
- Operating system independent

Organize, Streamline Server Rooms





RackView™

15", 17", 19", 20" LCD flat panels Fold forward & backward designs

- Built-in single or multiple user KVM switch options
- Supports AT/XT, PS/2 and Unix computers
- DVI and S-video options available on 19" and larger LCD
- LCD flat panel and keyboard can be sold separately ■ Available with full size, full function Sun keyboard

■ Optional multi-media version with TV tuner & stereo speakers



RackView™ Panel Mount LCD Mounts vertically in a standard

19" rack

- Available with a 15",17", 19", 20", or 23" LCD ■ 19" and 20" models support DVI and VGA inputs
- Resolution up to 1280 x 1024
- Fits in 7 9 rack units (Depending on model)
- DVI and S-video options available on 19" or larger LCD ■ Quick and easy rack mounting installation



VideoSplitter™ CAT5

Distribute, amplify & extend video to 6 or 12 monitors

- Video resolutions up to 1600 x 1200
- Each remote monitor can be up to 1,000'
- Optional Audio and Serial
- Easy to install
- Rack mountable chassis

ROSE US ROSE EUROPE ROSE ASIA ROSE AUSTRALIA

281 933 7673 +44 (0) 1264 850574 +65 6324 2322

+617 3388 1540

800-333-9343 WWW.ROSE.COM

Rose Electronics 10707 Stancliff Road - Houston, Texas 77099



Product Releases

PHYSICAL

Power Distribution

■ Eaton released power products that feature Powerware's Energy Management System for state-of-the-art monitoring. The Powerware PDUs, RPPs, and Power Xpert Gateway Series 1000 cards are scalable, customizable, and optimizable.

COMMUNICATIONS

Application Networking

■ Silver Peak Systems released an updated version of its NX family of appliances and GMS (Global Management System) software. Version 2.0 improves the configuration and usability features of Silver Peak Systems' scalable WAN acceleration platform. New features include enhanced pattern recognition capabilities and faster reads and writes to disk at high WAN speeds, centralized policy engine, advanced QoS, perapplication optimization, and new zero-touch configuration options. New and existing Silver Peak NX appliances and GMS appliances customers can get Version 2.0 with each system.

Content Networking

■ Barracuda Networks added Layer 7 capabilities to the Barracuda Load Balancer, expanding its existing IP load balancing capabilities to the application layer. Barracuda Load Balancer models 340 and higher now have cookie-based session persistence and SSL offloading with certificate storage and management. With Layer 7 capabilities, the Barracuda Load Balancer can direct traffic and maintain session persistence for Web applications without relying on the user's IP

address. The Barracuda Load Balancer utilizes session cookies, tying users to a single Web server that tracks and records personalized settings. Through SSL offloading, the Barracuda Load Balancer consolidates SSL certificates associated with SSL traffic into one location for storage and management. The new Layer 7 capabilities are available with Barracuda Load Balancer firmware release 2.0 and higher on models 340 and 440.

Network & Systems Management

■ AirMagnet released Handheld Analyzer 7.0, which is aimed at giving customers a handheld for proactively diagnosing and troubleshooting WLANs. This release supports 802.11b adapters and 802.11g, including Compact Flash Module with integrated antennas for recognizing and reporting all 802.11g speeds and traffic data. The handheld includes the pre-802.11n alarm to enable organizations to protect and manage threats related to the prestandard devices. This release of Handheld Analyzer also decodes and analyzes 802.11d information for customers who have devices that implement the standard. Current customers with an active software support subscription can upgrade free.

Router

■ Linksys has launched Linksys One through Hosted Solution Provider Partners and authorized Value Added Resellers. The latest version of Linksys One (version 2.0) is included, as well as three new products in the Linksys One product line. The new products include the next-generation Service Node for Linksys One XA, the Linksys One Wireless-G ADSL/Ethernet Services Router with

4-Port PoE Switch and 1FXS + 1 FXO (SVR200), and the Linksys One (2) Port T1/E1 Services Router With 24-Port PoE Switch (SVR3500). Linksys One offers the tools for integrating data networking, security, configuration backup, and VoIP. The SVR200 is available for \$929, and the SVR3500 is available for \$1,499.

Security

- Barracuda Networks launched the Barracuda Spam Firewall 100 for small businesses and organizations. It features the same 12 layers of defense that are characteristic of the full Barracuda Spam Firewall line. These layers include DoS and security protection, rate control, IP analysis, sender authentication, recipient verification, virus protection, policy (user-specified rules), Fingerprint Analysis, Intent Analysis, Image Analysis, Bayesian Analysis, and a Spam Rules Scoring engine. In addition, it has tools designed to prevent image spam, such as multipass OCR, automated fingerprint generation techniques, and Predictive Sender Profiling. The Barracuda Spam Firewall 100 is available for \$899.
- Fortinet released the FortiGate-3810A and FortiGate-3016B security appliances and a series of expansion modules that meet or exceed throughput requirements of enterprise and MSSP applications. The systems deliver 26Gbps of firewall performance, representing about a 300% improvement over competitive products. Both appliances are suited for network core and data center deployments and address requirements of service providers looking to build service offering based on the company's platform. FortiGate says the appliances use a combination of Fortinet's FortiASIC-CP6 Content Processor

and its new FortiASIC-NP2 Network Processor. The FortiGate3810A, 3016B, and related modules will be available in Q3.

a modules will be av

■ McAfee announced the Secure Internet Gateway 3000, an appliance with both email and Web security functions. The product supports up to 200 users per device and protects systems from spam, viruses, spyware, phishing, and malicious Web sites. McAfee's Total Protection is available for onsite or hosted management.

Switch

■ Fujitsu Network Communications announced a class of optical networking equipment, the Packet Optical Networking Platform, which provides integration of Ethernet, ROADM (reconfigurable optical add/drop multiplexer), and SONET (Synchronous Optical Network) transport technologies built on a single addressable optical networking class element. The new FLASHWAVE 9500 platform's universal switch fabric technology lets service providers use ROADM technology, connection-oriented Ethernet transport technology, SONET technology, and optical networking with transport-class software and database management, management interface functionality, and precision fault sectionalization. The switch fabric lets both SONETbased traffic and packet-based traffic be switched, groomed, and managed in its native format without any form of circuitemulation technology. The platform supports 480G of SONET or packet bandwidth in one-third of a rack. It also integrates full ROADM functionality with support for a two-degree, 40G-ready ROADM in onequarter of a shelf.

Go to Page 17

HERGO COMPUTER TECHNICAL FURNITURE

An original equipment manufacturer since its inception in 1992, Hergo remains a trusted source for technical furniture, computer enclosures/ cabinets, relay racks, LCD mounting solutions and command & control centers.

We are technology people who understand your computing workspace needs.

As part of our 100% customer satisfaction guarantee, Hergo offers free space design and consultation, including 3-D CAD drawings and simulated environment renderings to ensure maximized user space and productivity.

Hergo is an approved supplier to all branches of the U.S. Government.

GSA Contract # GS-29F-0133G









888.222.7270

www.hergo.com

Product Releases

Continued from Page 16

■ Gigabit speeds at entry-level prices are on offer from two new switches from Linksys. The new models aim to provide manageability without the price and hassle of a Layer 2 managed switch, a spokesman says. The SLM2008 (\$115.99) is sold as the 8-Port 10/100/1000 Gigabit Smart Switch with PD and AC Power (meaning it can use 802.3af PoE or standard wall current). The SLM2005 (\$95.99) is similar, but with five ports.

■ Voltaire introduced the Grid Director ISR 2012, a director-class switch designed for high-performance grid computing in the data center. The Grid Director ISR 2012 features up to 288 ports of 20Gbps InfiniBand connectivity and microsecond latencies. The switch creates a unified fabric for the data center with connectivity between Infini-Band, Ethernet, and Fibre Channel. Voltaire's GridVision software integrates with the Grid Director ISR 2012 to enable fabric monitoring and provisioning. The Grid Director ISR 2012 is qualified to have a BER (bit error rate) of 1E-16, and it supports copper InfiniBand cables up to 14 meters, as well as optical InfiniBand cables up to 100 meters running at 20Gbps speed.

Wireless

■ There are two new EliteConnect 802.11a/g Outdoor Enterprise Access Point/Bridges available from SMC. The SMC2890W-AG and SMC2891W-AG, both weatherproofed and priced at \$699.99, are suitable for outdoor or indoor installation by SMEs. With a 2.4GHz/5GHz dualradio architecture, the new EliteConnects can bridge LANs over either band while providing an access point over the other. There's also support for WPA/WPA2, 802.1x RADIUS, and 802.3af PoE.

END NODES

Mobile

■ Tangent released the Rugged Mini, a PC for use in harsh environments, such as on factory floors, in the field, and mounted to carts or vehicles. The Rugged Mini is designed to withstand shock, dust, vibration, humidity, extreme cold and heat, and electromagnetic interference. The Rugged Mini is 2 x 9 x 7 inches (HxWxD) and weighs less than 4 pounds. The computer uses convection-based passive cooling and is available with either an Intel Celeron M, Core Solo, or Core Duo processor. The Rugged Mini can also be wall-mounted or attached to a display screen via mounting flanges. The PC includes VGA and DVI output, as well as support for dual displays in landscape and portrait mode. The Rugged Mini has a starting price of \$1,195 and comes preloaded with Windows XP Pro.

Printer

■ **Ricoh** introduced the Ricoh SP C210 color laser printer. The SP C210 speeds through black-and-white jobs at 31ppm and supports color speeds of 8ppm. The SP C210 can print the first page of a blackand-white document in less than 13 seconds and color first pages in 19 seconds. The device is equipped with an operation panel that makes it easy to access the function menus. Additionally, the SP C210 has a standard paper tray capacity of 250 sheets, and with an optional 530-sheet paper tray, the device can hold up to 780 sheets. A legal cassette tray is also available. The SP C210 costs \$375.

Server

■ HP introduced its third-generation CCI (Consolidated Client Infrastructure), enabling systems that operate BladeSystem PCs to perform tasks such as application downloads and upgrades, OS migrations, and security upgrades with power and ease. HP's bc2000 and bc2500 PCs minimize power usage while providing optimum performance. The bc2000 Blade PCs start at \$1,000 per blade and feature a single-core AMD Athlon 64 2100+ processer, an 80GB hard drive, and 1GB of DDR 2 memory. The bc2500 Blade PC starts at \$1,500 and has an AMD Athlon 64 x2 3000+ dual-core processor, an 80GB SATA hard drive, and 1GB DDR2

Server Appliance

■ Sun Microsystems announced the Sun SDRS (Secure Data Retrieval Server), a data management appliance that helps communications service providers address EU data retention directive requirements. The Sun SDRS is an open standards-based appliance based on the Sun Fire X4500 server, and it's secured through Sun's Solaris Operating System and the Sun Secure Global Desktop Software. It provides direct access to source data, as well as options to seal generated disclosures to requesting authorities. The Sun Fire X4500 server is integrated with CopperEye's disruptive technology so that the appliance can retrieve specific records quickly. Additionally, Sun tracks the evolving ETSI standards for remote data query and handover to make certain the appliance will meet future requirements.

■ Xiotech announced the Xiotech CEMS, an appliance with built-in software that captures, classifies, manages, and controls electronic files so organizations can collect and store evidence for legal or compliance action. CEMS Version 1 supports email messages and 390 attachment file types, as well as the bulk import of electronic documents. Xiotech CEMS captures electronic business information as it is authored and routed across an organization. When data is captured, each document is inspected for an automated classification. A copy of the captured data is then saved in the CEMS repository. Designated users can then manage and resolve incidents through the search, audit, analysis, tagging, legal hold, and production capabilities.

Storage

■ Bus-Tech announced its MDL (Mainframe Data Library) and MAS (Mainframe Appliance for Storage) together with the Hitachi Content Archive Platform. The combined offering provides a mainframe tape-on-disk digital archiving platform that lets users more readily handle data growth, regulatory compliance, and governance. The offerings also improve access time to tape-based data, reduce tape handling, and improve disaster recovery. Bus-Tech's MDL and MAS components connect directly to zSeries mainframe FICON or ESCON input/output channels and disk storage systems and support advanced archiving, backup, and recovery functions. The MDL and MAS offerings are capable of emulating up to 1,024 MDL or 256 MAS devices.

Go to Page 18

SECURITY; APPLICATION NETWORKING

May 4, 2007

Manage Bandwidth & Security With User Identity Resolution

A10 Networks Appliances Help You Improve Security, Increase Performance & More

A10 NETWORKS' EX SERIES and IDsentrie provide one-of-a-kind bandwidth and identity management capabilities to help your enterprise simplify network management and improve security.

IDsentrie is the industry's first network identity management appliance with instant user identity resolution. With IDsentrie, organizations improve their security and compliance requirements by enabling quicker network forensics. Busy IT departments can speed troubleshooting with IPto-ID Services instantly resolving network issues to the users responsible. System administrators are more productive with Unified Identity Manager's ability to centrally provision and manage user accounts from multiple data stores simultaneously. Employees are more productive with User Self Help Services eliminating the need for help desk engineers to reset passwords and unlock accounts. Security is increased with network authentication and Radius features preventing unauthorized network access. And IDsentrie's rich reporting and auditing features provide full user identity visibility.

The appliance's new version 2.0 firmware offers additional database support, enhanced identity management capabilities, customizable self service features and an improved GUI and reporting tools.

Key features in version 2.0:

SQL support. Supports Oracle SQL, Microsoft SQL, and mySQL, bringing support across a variety of popular and custom applications.

Generic parser. Custom parser rules can be created to allow the IDsentrie Identity Event Manager to parse any textbased events from third-party devices, enhancing user identity forensics.

User-customizable self service. For self-service password and account management, users can now configure their own self service questions and answers, further decreasing the time needed from



The IDsentrie appliance offers integrated features designed to enhance network authentication.

the help desk to service customers on account management issues.

Improved GUI and reporting tools. IDsentrie's GUI has been streamlined to speed access to many of its key features and has added a new reporting function to let users quickly access IDsentrie's more than 140 reports.

EX Series

The EX Series is the industry's only secure WAN management appliance with



The EX Series secure WAN management appliance offers identity-based application visibility.

identity-based application visibility. By managing bandwidth and traffic with unprecedented user and application visibility, the EX Series helps organizations of all sizes secure, optimize, and scale their network edge and perimeter. WAN management functions are consolidated into an appliance with user identity capabilities, so organizations can simplify their management of edge services and increase performance and reliability for applications while simplifying troubleshooting, compliance, and identity forensic activities.

With the EX Series' advanced Feature Chaining capabilities, customers can mix and match EX Series features to customize WAN management solutions to fit their network requirements without sacrificing performance or adding unnecessary latency, unlike implementing point play products from multiple vendors.

The EX Series provides:

Instant WAN user visibility. Correlates between WAN application activity and user identity for top band-

width usage, IM, file transfer, and email applications. Provides top user information for more than 100 business application classes for network tracking, troubleshooting, and compliance.

Advanced WAN optimization. Integrates link load balancing, advanced bandwidth management, site-to-site compression, and cache redirection to optimize and control WAN resources.

Network infrastructure security. Provides firewall load balancing and identifies network anomalies to protect against attacks such as Distributed Denial of Service, port scans, address sweeps, protocol misuse, malformed packets, and much more.

Scalability and reliability. Leverages an SMP (symmetric multiprocessing) architecture to deliver up to 2Gbps of aggregate throughput and rate shaping/limiting capabilities. Ensures service availability with redundant RAID-1 hard drives, advanced redundant power supplies, and removable smart fans.

The EX is a high-performance appliance that manages bandwidth with unprecedented user visibility; the IDsentrie is the industry's first network identity management appliance with instant user identity resolution

(888) 210-6363

EX: www.Processor.com/EX

IDsentrie: www.Processor.com/IDsentrie





Power Management

APRIL 27, 2007

Affordable Power Management With IPV42/70 Series

Power Control & Environmental Monitoring Devices From Pulizzi

EVERY DATA CENTER
is confronted with distributing, controlling,
managing, and monitoring electrical power to
all the devices in its racks.
For some IT personnel, remote
access becomes essential to handle multiple locations. There have
always been products that could handle one or more of these tasks, but now
data center managers can have it all.

The IPV42/70 series (so named because they come in either 42- or 70-inch heights) Intelligent Power Controllers from Pulizzi Engineering cover all these points. Every aspect of each outlet can be viewed locally, via a digital meter, or remotely, via Web browser, Telnet, or SNMP software. Out of the box, the IPV42/70 series can monitor voltage and current but, with an optional environmental sensor kit, can be expanded to include data on temperature and humidity. There are additional inputs allowing for integration of switches to detect rack enclosure events, and the software interface is feature-rich.

The software can be configured either to work with SNMP management software by sending traps or to send email alerts when triggered by an event. Each unit, outlet, and sensor can be named in software for a user-friendly interface, and there is a provision for multiple user logins for remote access. Pulizzi Engineering highlights the

versatility of this line by enabling users to specify certain characteristics at order to suit an array of applications. Customizable attributes include voltage, current, number of outlets, and connector types.

Pulizzi Engineering is an

ISO 9001:2000-certified company that designs and manufactures its products in the U.S. It has a reputation for high quality that has won the company business from many Fortune 500 companies, as well as some government

agencies. This quality is evident in its products, which meet objectives and certifications such as RoHS, UL safety specifications, and CE directives.

Pulizzi Engineering IPV42/70 Series Intelligent Power Controllers

tart at \$799

Distribution, control, management, and monitoring in a single device

(605) 334-8999

www.Processor.com/IPV-42-70



Product Releases

Continued from Page 17

■ The KeyVault security solution and CryptoStor Tape appliance by **NeoScale Systems** have been combined with the Eclipz Tape Encryptor by **Optica** to create and archive all encryption keys to access information saved on tape hard drives. NeoScale's keys protect the user's investment in hardware and media while managing encryption keys on an open, automated management platform.

■ Overland Storage released a VTL (virtual tape library) appliance. According to Overland, the REO 9100 D2D VTL can be configured as a VTL, standalone virtual tape drives, and/or disk volumes. It includes DVT (dynamic virtual tape) technology, as well as 4Gbps Fibre Channel or iSCSI host connectivity. It boasts up to 66TB of data capacity and has RAID 5 protection. It also has dual 3Ware SATA RAID controllers. Users can set up the REO 9100 via Web access and can define VTL up to 32 virtual tape drives (up to 180 virtual cartridges, four library partitions). The REO 9100 starts at \$28,041.

■ A fast IP-based storage cluster is **Pivot3's** first scalable network storage product. The Pivot3 RAIGE (RAID Across Independent Gigabit Ethernet) Storage Cluster uses block-level virtualization architecture to reduce costs without sacrificing performance. By using standards-based servers and hard drives connected by Ethernet instead of dedicated RAID hardware, Pivot3 can offer a more flexible, "pay as you grow" model, the company says.

■ LTO-4 tape storage is now available in **Quantum's** storage library platforms, starting with the Scalar i2000 and Scalar i500. Featuring 256-bit native AES encryption and both forward and backward compatibility, LTO-4 surpasses LTO-3 with an 800GB-per-tape native capacity and native speeds up to 120MBps.

Components

■ Supermicro launched the SuperBlade product line, blade servers with architecture that supports both quad-core and dual-core CPUs. The SuperBlade 7U enclosure holds 10 2P (two-processor) or 4P (four-processor) computer blades in any combination. Six SuperBlade enclosures fit into a 42U rack, which allows customers to scale to 160 CPU cores per 7U enclosure or 960 CPU cores per rack. The SuperBlade line features multiple integrated switch fabrics to optimize I/O performance and connectivity. The product line also features 90%+ efficiency power supplies and offers flexibility with 2,800 to 7,500W redundant (n+1) configurations. The SuperBlade line includes an integrated chassis management module with IPMI 2.0, KVM-over-IP, and Virtual-Media-over-LAN.

SOFTWARE

Business Productivity

■ Accellion released the latest version of its secure file hardware and software product, Secure File Transfer 6.0. The new version offers multilanguage support to better serve enterprises that communicate with partners and customers globally. The product's new interfaces are localized for English, Chinese, French, German, Japanese, and Korean. Accellion also tackles other collaboration-delaying situations, such as different time zones and operating systems, with Secure File Transfer 6.0. The file transfer product now supports Microsoft Outlook 2007 and offers script support for Linux, Mac, and Windows. SNMP support provides users with simplified appliance management, and the new ALCS (Accellion Local Clustering System) provides local hot failover capabilities. Users can now invite nonusers to use Accellion file transfer and can take advantage of new user access security settings. Accellion Secure File Transfer also now features Syslog capabilities, which provide a secondary audit trail.

■ Business Objects unveiled the Business Objects Crystal Decisions Professional, which is an all-in-one business intelligence and data integration product designed for small to medium-sized enterprises with less than \$1 billion in annual revenues or fewer than 1,000 employees. Business Objects Crystal Decisions Professional lets IT administrators take advantage of the offering's developed data integration functionalities, intelligent reporting, ad-hoc query and analysis, and dashboards. The platform is adept at consolidating data from a range of supported databases, including Microsoft SQL Server, IBM DB2, Oracle, Ingres, and more. Customers who purchased the Standard edition released earlier this year can upgrade to the Professional edition by simply paying the difference.

■ Microsoft unveiled the latest version of Office Live Meeting, which is designed to improve online meetings, events, and training. This release includes a redesigned user interface; integrated collaboration experience; and support for live video, VoIP, and rich media. The release is set for this fall and will make it easier for organizations to use Web conferencing, according to Microsoft, whether in ad-hoc sessions, formal Webbased meetings, advanced online training, or large communication events. This release includes support for two-way phone or VoIP; embedded flash, video, and audio files for delivering rich content; and live Web cam and 360-degree panoramic video via Microsoft's RoundTable. Video demonstrations of Office Live Meeting 2007 are available at www.microsoft.com/uc.

Database & Data Mining

■ Quest Software has released Change Director for SQL Server, plus new features to its Performance Analysis for SQL Server 6.0 and Toad for SQL Server 3.0 products. Change Director will let DBAs more easily script and migrate database scheme changes while monitoring the influence of those changes on the database. DBAs will get more control of databases via proactive monitoring of the database structure and rolling back changes if needed, thus reducing risks of unexpected outages. Quest says Performance Analysis will give DBAs critical data about database performance, plus offer various tools to determine causes and solutions for performance issues. The product uses improved StealthCollect technology, which is a 24/7, nonintrusive, lightweight memorysampling technology that proactively analyzes performance data. Additionally, the product includes IntelliProfile, an adaptive tool that monitors database performance continually. Change Director is available in North America beginning at \$795.

Network & Systems Management

■ Citrix Systems launched the newest iteration of its Citrix EdgeSight application performance monitoring platform. Citrix also announced Citrix EdgeSight for Load Testing 2.5, which is a load- and regressiontesting platform that lets IT administrators provide a stable and predictable application delivery environment. Citrix EdgeSight 4.5 features a new instrumentation, improved real-time health and availability monitoring capabilities, and an intuitive and configurable performance and alert dashboard. Citrix EdgeSight for Load Testing 2.5 was designed for Citrix Presentation Server and

Product Releases

Citrix Desktop Server environments and lets administrators determine how the system will perform under load before deploying the new applications and hardware system-wide. Citrix EdgeSight for Presentation Server 4.5 and Citrix EdgeSight for Endpoints 4.5 start at \$75 and \$50 per concurrent user, respectively. Both include one year of Citrix Subscription Advantage. Citrix EdgeSight for Loading Testing 2.5 will be available starting at \$7,500.

■ eIQnetworks has announced SecureVue 2.5, a SIM product that combines compliance features and operation management. It consolidates Log, Vulnerability, Configuration, Asset, Performance, and NetFlow data tools. SecureVue is ideal for applications that involve interdepartmental collaboration. It includes NetFlow Analytics, Compliance Portal, Generic Parser, Automated Asset Discovery, QuickView Insight, and Advanced Visualization. SecureVue implementations start at \$49,995.

■ GlobalSCAPE has introduced EFT (Enhanced File Transfer) Server 5.0, a Windows-based product that provides tools for transferring files between employees, business associates, and customers. It offers features for handling security, integration, and administrative tasks. Server administrators or help desk staff can now connect and manage a server at the same time. The product now includes instant feedback for Active Directory and LDAP. GlobalSCAPE has also included re-engineered Event Rules for better integration with workflows. It also includes HTTP-to-HTTPS redirection and better control of SFTP banner messages and SSL ciphers. GlobalSCAPE EFT 5.0 is priced starting at \$7,995.

■ Version 2.1 of **Network Engines'** NEWS (Network Engines Web-based Services) was released, improving the ability of computer appliances to "phone home" to check for updates and automatically download and install them when appropriate. NEWS 2.1 is compatible with the management services provided by the Windows operating system and allows users to view alarms when an appliance encounters a disk error.

■ Open Text released a software suite designed to help businesses integrate heterogeneous systems, including Unix and mainframes, with Windows desktops. The Hummingbird Connectivity 2008 suite features Exceed, NFS Maestro, HostExplorer, and Hummingbird Security. The suite includes several enhancements, such as Windows Vista Certification for 32-bit and 64-bit Vista, as well as SSL and Kerberos, which come standard with the suite. The suite's Exceed 2008 offers support for X11R7.2, which is the latest X Window System release. All of the products in the suite offer 64-bit support. Open Text's Hummingbird Connectivity 2008 suite supports Windows Terminal Server Edition, Citrix Presentation Server, and Windows 2000/XP/Server 2003/Vista.

■ ScienceLogic has announced EM7 5.0, an IT management tool. Version 5.0 will be released next month and includes dashboard tools for high-level and granular reporting. With EM7 5.0, administrators can perform advanced troubleshooting and reporting. The product now includes the EM7 Database Dynamic Application feature for displaying information in an Oracle, MySQL, PostgreSQL, or Microsoft SQL database.

■ Symantec released an update to Altiris SVS (Software Virtualization Solution). This new release includes application

virtualization enhancements, including Windows Vista support, and the addition of integrated application streaming. Symantec partnered with AppStream, a provider of application streaming, to provide ondemand delivery of virtualized applications. With these enhancements, Symantec gives customers the flexibility to install and run applications according to their unique requirements. Altiris SVS eliminates conflicts between applications, keeps the base Windows installation clean, and provides application streaming to meet business demands. SVS now offers increased control of software environments, on-demand software repair, reduced testing cycles and help desk costs, the ability to move users and applications between computers, and reduced software license costs.

Security

- GTA (Global Technology Associates) released the latest version of its firewall system software. GTA GB-OS 5.0 offers advanced perimeter security via UTM (unified threat management) for GTA firewall systems. The GB-OS software has an IPS (intrusion prevention system) and can work in conjunction with Mail Sentinel Anti-Virus, Anti-Spam, and Surf Sentinel. It also includes an enhanced GUI for importing and exporting configuration in XML format and has VPN enhancements. Customers who purchased a GTA firewall after April 1 or have a GTA support contract or annual maintenance agreement can upgrade by downloading GB-OS 5.0 from GTA's Online Support Center.
- ScriptLogic released an updated version of its Security Explorer product designed to improve permissions and access controls for Microsoft Office SharePoint Server 2007. Security Explorer 6.5 for SharePoint offers enhanced security management features that improve the management of end-user access and regulatory compliance. The latest version of Security Explorer also lets IT administrators manage Windows SharePoint Services v3, explore a tree view of the entire Share-Point site, and edit SharePoint permission levels and SharePoint groups. Security Explorer 6.5 for SharePoint will be available by the end of this month and is expected to be priced on a per-server and per-workstation basis.
- Stonesoft released StoneGate Secure Mobile Connectivity Solution, which provides users with secure remote access to business applications. StoneGate supports multiple access points from different devices and network types. Its SSL VPN feature lets users securely connect to other employees, partners, and customers. StoneGate includes a firewall, an IPS, and SSL VPN.

Storage

■ NetApp's addition of SnapManager for Microsoft Office SharePoint Server 2007 helps to assist with data management, backup, recovery, and deployment. The aim of this addition is to reduce costs associated with data management. SnapManager will be available worldwide in August.

SERVICES

Business Productivity

■ BMC Software launched the third version of the IT Infrastructure Library to support its Business Service Management program, a business-oriented approach to implementing the best IT practices into the business arena. ITIL V3 includes features to access management, receive reports on business impact analysis, configure management systems and knowledge, and perform request fulfillment.



iStor found inspiration when it created the highest performance, up to 1160 MB/s, and most robust iSCSI products. The resulting solutions provide companies with the ability to overcome technology and total cost of ownership limitations in DAS, SAN, and NAS environments.



The System

Fully-integrated GigaStorATX 1GbE and 10GbE controllers conform to the ATX form factor specifications, providing a cost-effective performance-based iSCSI Storage System.

The Solution

iS325

Currently Enrolling

iStor-inAbled™

Partner Program

Contact iStor at info@istor.com

For VAR's and System Integrators that require a vendor-provided enclosure, iStor offers the iS325 Solution. The iS325 includes the GigaStorATX System supporting eight ports of GbE or a single 10GbE for iSCSI connection, with capacity for up to 15 customer-supplied high-capacity sATA drives.

When it comes to high-performance, feature-rich, and cost-effective iSCSI RAID storage, iStor Networks solutions

should be on your evaluation short list. iStor offers you the balance of price and performance that makes iSCSI IP Storage an obvious "YES" decision

for organizations of all sizes or sophistication.

Stor Networks, Inc.

www.iStor.com

 $@\ 2007\ iStor\ Networks,\ Inc.\ iStor\ Networks,\ Inc.\ is\ a registered\ trademark,\ and\ the\ iStor\ Networks\ logo\ and\ GigaStorATX\ are\ trademarks\ of\ iStor\ Networks,\ Inc.\ Photo\ courtesy\ of\ Outerlimits\ Offshore\ Powerboats.\ All\ rights\ reserved\ worldwide.$

ETASIS ELECTRONICS CORPORATION

PS2 Type Switch Power Supply EPAP-750/850



Meet ATX12V / EPS12V Compatibility

• Active Power Factor Correction (PFC)

Universal AC Power Input

• OVP (Over Voltage Protection)

• OCP (Over Current Protection)

• OPP (Over Power Protection)

• SCP (Short Circuit Protection)

• Two PCI Express Connectors

• MTBF > 100,000 Hours

3 Years Warranty

• OTP (Over Temperature Protection)

• Serial-ATA Connectors for SATA Devices

Automatic Thermal Control Configuration

FEATURES

- **≭** 750 / 850 Watts Output Power
- ★ High Efficiency more than 80%
- **★** ATX12V/EPS12V Application
- **≭** For PS2 Pedestal System
- **★** Over Temperature Protection

• Harmonic: Meet EN61000-

- Harmonic: Meet EN61000-3-2 standards
- EMI/RFI: CE, FCC class B, BSMI and CISPR class B
- Safety: UL, cUL, CB, CE, TUV, MEMKO

GENERAL SPECIFICATIONS

- Input Voltage Range 100 to 240VAC
- Input Frequency Range 100 to 240VAC
- Power Factor: > 0.96 at full load
- Power Good Signal: 100 to 500ms,TTL Signal
- PSON (Remote ON/OFF): TTL Signal
- Operating Temperature: 0 to 50°C

APPLICATION

- Rackmount
- Industrial PC
- Server Workstation

PROCESSORS

Xeon
 Pentium 4 /D



18549 Gale Ave Rowland Heights, CA 91748 Phone: (510) 490-4080 Fax: (510) 490-4087 www.etasis.com.tw STORAGE

May 25, 2007

Virtual Tape Made Simple

NexiTech VTAng Can Accelerate Your Backup & Restore Operations

IN RESPONSE to market demand, NexiTech has created a modular virtual tape array storage appliance: the next-generation Virtual Tape Array, or VTAng (vee-tang).

VTAng is a hardware/software product that transforms an ordinary computer or rackmount server and the hard disk storage attached to it into a D2D (disk-to-disk) backup appliance. The product is aimed at IT directors and managers in the small to medium-sized enterprise market and is designed to help accelerate backup and restore operations. Unlike other similar products on the market, the VTAng can be customized.

Virtual tape emulation technology is used to create a device server that acts just like a bunch of tape drives from the perspective of one or more host computers or backup servers. Since the backup appliance presents a view of one or more "virtual" tape drives to the host, it is appropriately called a virtual tape array. Similar to a VTL (virtual tape library) but faster, the virtual tape array offers many of the same benefits as a VTL but with less complexity and lower cost of ownership.

Three Versions

VTAng appliances come in three forms:

Head form. This device bundles hardware and software with a 1U or 2U rackmount server, but with minimal

internal storage. This form is ideal for enterprises that want to try out virtual tape technology and at the same time save some money by using the head to convert legacy equipment into a D2D backup appliance. This helps them to preserve their existing investments in storage resources by extending the useful lifetime of those resources (yesterday's primary storage may be useful as today's secondary storage). Customers like the convenience of buying a more integrated solution that the head form brings, and they want to use it as a controller for some existing external hard disk storage (e.g. RAID or JBOD arrays) that they already have in their possession.

Disk form. This version provides a higher level of integration by bundling hard disk storage within the 3U D2D backup appliance. And with the use of ruggedized removable disk storage devices, the subsystem becomes a D2D2RD (disk-to-disk



removable disk) backup appliance, letting users archive backups with a true tape replacement technology: portable hard drives packaged for removability. Storage security is always a concern, but even more so when moving data offsite. To address that concern, there is an optional hardware-based compression/encryption engine that uses the AES-256 encryption algorithm.

Kit form. This version of VTAng can vary depending on the existing hardware you wish to use. Give us a call or email us for details.

Simple To Use & Manage

VTAng is simple to use and manage. A GUI lets you easily define virtual tape drives and configure the associated bus, target, and LUN values that will be seen by the host. The devices are conveniently arranged in a device tree, and any drives with media loaded are shown in boldface.

The user can easily define the file that is used for the backing store and the file size by simply clicking a device. Virtual tape media can be loaded or unloaded with a click of the mouse, and all virtual tape devices can be started or stopped at once. The GUI also lets users trace all the SCSI commands sent to a particular virtual tape device and will save that information to a trace file. The iSCSI device mappings are also configured graphically, letting the user define

which devices are mapped to iSCSI targets.

For those users that need to remotely manage the VTAng backup appliance, Remote Desktop is bundled with Microsoft Windows Unified Data Storage Server 2003 R2, the operating system running on the appliance. Clients are available for most Windows versions, so a Windows client can control the desktop of the appliance and manage it over a network connection as if sitting right next to it.

Support for those particular tape drives that are emulated by VTAng is bundled with Windows, so for many customers, connecting a VTAng backup appliance is quite easy: the host detects the virtual tape drives and then automatically loads the correct driver.

Specifications

Connectivity: NAS and SAN Transport: iSCSI, Fibre Channel, and SCSI Media: Fixed and Removable Disk Redundancy: RAID (0, 1, 5, 10, 50) Virtualization: Virtual Tape and Disk Encryption: AES-256

NexiTech VTAna

Starting at \$4,995, depending on configuration

A hardware/software product that transforms an ordinary computer or rackmount server and the hard disk storage attached to it into a D2D (disk-to-disk) backup appliance

(719) 687-3225

www.Processor.com/VTAng



HVAC APRIL 13, 2007

Cooling For Cramped Spaces

MovinCool CM12 Ceiling-Mounted Unit Designed To Save Space & Money

SPOT COOLING Is an energy-efficient alternative to central air conditioning. But often the main roadblock to efficient cooling of cramped server telecom and equipment rooms is the lack of floor space to accommodate a roll-in portable spot cooler. The MovinCool CM12 offers a convenient

solution: It's a lightweight, space-saving, easy-to-install ceilingmounted unit.

The CM12 delivers 10,500Btu/H of cooling in a self-contained unit that mounts easily with off-the-shelf hardware. It connects to a standard 115V, 15-amp circuit.

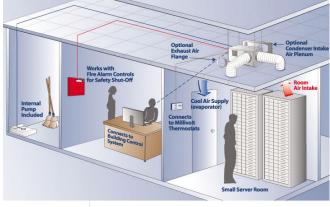
The CM12 features the shortest top-to-bottom profile in the industry—

only 15.5 inches—ensuring it will fit into nearly any drop ceiling. In addition, the CM12 comes with several cost-saving capabilities and safety features:

- Conveniently controlled by most offthe-shelf Millivolt thermostats
- Works with fire alarm controls for safety shut-off
- Self-contained system requiring no refrigerant piping
- Built-in supply and return air flanges enable easy duct installation and improved air circulation
- Warning signals and alarms for condensation overflow and unscheduled shutdown can be wired to a central location
- A standard internal pump

 Mounting brackets designed for off-theshelf mounting hardware

In addition to the CM12, MovinCool offers the Office Pro lineup of portable spot cooling solutions for low-temperature equipment cooling; the Classic and Classic



Plus Portable Series for harsh environments; and the PC7 Portable Air Conditioner for individual hot spots.

MovinCool CM12

Offers an energy-efficient, space-saving alternative to central air conditioning

\$2,786

(800) 264-9573

www.Processor.com/MovinCool



POWER PROTECTION

March 30, 2007

Protecting Critical Data Center Loads

Staco TreStar P Series UPSes Eliminate Overloads, Flicker & More In Real Time

THE STACO TRESTAR P SERIES of UPSes is designed to meet the power protection needs of today's most sensitive critical loads. The P Series' new digital control

system eliminates all overloads, frequency variations, transients, flicker, and blackouts in real time. And it processes signals 10 times faster than previous analog methods.

UPS reliability begins with design. With a true online, double-conversion design, the TreStar P Series isolates your connected loads from utility power and provides clean, regulated

output voltage and frequency.

The TreStar P Series was designed with the end user in mind. It offers the highest quality, along with the reliability you expect. It is easy to install and has a user-friendly front control panel with an easy-to-read LCD menu. Its advanced battery management system reduces the frequency of maintenance and replacement schedules, saving you time and money.

Staco TreStar P Series

125-150kVA model

Staco's TreStar P Series comes in two versions: 125-150kVA and 180-225kVA. The 125-150kVA is parallelable for capacity or redundancy, with up to eight modules, and features a 0.9 output power fac-

tor, vector-controlled IGBT inverter, input circuit breaker, internal maintenance bypass, advanced battery management, and an optional 7% harmonic filter.

In addition to all the features found on the 125-150 model, the 180-225kVA model also features state-of-the-art communications, matching battery cabinets with internal disconnect, top and bottom cable entry, and a standard 7% harmonic filter.

Other optional features include:

- SNMP Adapter
- External Maintenance Bypass
- Parallel kit
- Network Solutions software
- Extended battery runtimes
- Extended warranties
- Preventative maintenance

staco TreStar P Series

True online, double-conversion UPS with a digital control system designed to process signals faster than analog methods

(866) 261-1191

www.Processor.com/PSeries125 www.Processor.com/PSeries180



Find What's New At Processor.com

Processor's dedication to the data center/IT industry extends far beyond this weekly print publication. Our Web site, www.processor.com, has a number of great features you can rely on to help simplify your technology and product research and buying decisions.

My Personal Library —

When browsing the editorial archive, did you find an article that you want to be able to easily refer to later? Click the Add To My Personal Library link in the upper right of the article page (you must be logged in toProcessor.com to see the link). You can enter a folder name and a brief note about the article for I ater reference.

Processor Showcase

You should be familiar with the print edition of our Showcase advertising section—it's the section beginning on page 5 of this issue that displays dozens of products of interest to data center and IT professionals. Now there's an electronic counterpart with hundreds more products we can't fit in print.

If you know the specific manufacturer or advertiser you're looking for, click Browse By Advertiser. If you're looking to see if a solution exists, click one of the By Category links (either graphics-based or text-based) or the Word/Phrase Search link.

The Word/Phrase Search is the quickest route but choose your keywords wisely to ensure you get the best results.

If you choose the graphics-based browse option, you'll see instructions on how to use the browsing feature. Pass your cursor over one of the five color-coded categories near the top of the page (Physical Infrastructure, Communications, End Nodes, Software, or Services) then choose the category or subcategory you want and click it. A list of links appears in the left window; pass your cursor over the links, and the product ad displays in the right window. Once you've found aproduct of interest, click the red More link in the bottom right of the ad for more detailed information.

Latest Added -----

You'll find links to the 10 most recent product For-Sale Listings posted from our dealers and resellers.

Post A Free . . .

Have a computing product you want to sell or buy? Get it done by posting a free For-Sale Listing or a Want-To-Buy Message. Your Want-To-Buy Message will be automatically sent to our dealers and resellers that offer the product you're looking for.

Find Dealers

Want to find a dealer in your area or view a complete list of all dealers listed on Processor.com? Choose one of three options: Detailed Search, Geographic Search, or View All Dealers, depending on your needs.

Industry Jobs

View or post job openings at your company or view or post a job wanted listing.

Advertising

If you're a manufacturer, reseller, or dealer and want to get your message out to thousands of qualified data center and IT professionals each week, check out the online Media Kit or enter your contact information to have one of our advertising reps contact you.

Tech Support Center

Smart Computing

- 8

Computer Won't Shut Down



static Internet Protocol address information, visit SmartComputing.com

Register

You can browse and search our site without registering, but to take advantage of certain features, you'll want to register (if you don't want to register right away, the site prompts you when you need to register). Provide some basic information, answer a few questions, and select a password, and you're ready to go. If you already have a username and password, you can go right to the Log In link (if a welcome message appears, you're already logged in).

All-In-One Search

The All-In-One Search area on our Web site, www.Processor.com, makes it easy to find detailed information on products with just one click. Simply find the product category you need (categories are sorted under five areas: Physical Infrastructure, Communications, End Nodes, Software, and Services) and click the link.

Each resulting page displays all the information regarding that product category. Information is sorted by Product Showcase (concise product listings that include product photos and a brief description), New Product Overviews (more detailed product-focused editorial articles), and Most Recent Articles (more general articles covering products and information related to that category).

If you know the specific product name or manufacturer you want to know more about, click the Showcase Ads link under Search Only in the All-In-One Search area. There you'll find options to search By Advertiser and By Word/Phrase Search. By Advertiser lets you quickly link to all products offered by a specific manufacturer. By Word/Phrase Search lets you search for specific products, features, or other keywords.

Cover Articles

Link right to the two cover articles from the most recent issue, view the current issue's electronic table of contents with links to all articles, view the current issue as a PDF, or search past issues. When searching past issues, you can either perform a keyword search or see a list of all issues or all articles in the archive. Every article we've written is archived on the site, and most issues have a PDF version available.

Dealer For-Sale Listings— **Used, New, Refurbished**

If you're looking for our searchable collection of thousands of products for sale, this is the place. Search for a part number; enter a make, model, or description; or pick a manufacturer from the list.

Subscription Headquarters

Go here to update your address or start receiving your own weekly copy of Processor.

About Us

View some basic information about the print publication and Web site.

Extras

Find out how to make Processor.com your home page or view the Web site for our parent company, Sandhills Publishing.

OPINIONS

Requiem For Tape Backup

According to Robert Abraham's "2007 Tape Library Outlook" from Freeman Reports, total revenue from all tape libraries declined 15.6% in 2006 vs. 2005, while unit shipments declined 4.5%. The drop in industry revenue follows two consecutive years of revenue growth-10.4% in 2005 and 13.5% in

2004. There were steep declines in all tape technology except LTO, although tape users purchased more than 50% more capacity than in the previous years as they migrated to higher-capacity and higher-performance tape drives and cartridges. IDC estimates that total external disk drive storage grew 8% in the same period.

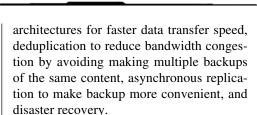
Disk Systems Showing Backup Backbone

There appears to be a sea of change in backup hardware for many users. Over the last few years, tape has been losing ground against SATA hard drive systems for the nearline storage market. The nearline market is data that is accessed less often but still needs to be online. Disk drives now provide a very cost-effective approach to nearline storage. As a consequence, some companies are beginning to displace their old backup tape libraries with disk-based storage or are relegating tape further back in the storage hierarchy.

For many customers, their nearline storage serves as their backup, as well, so this trend has meant a switch from tape to hard disks for backup. Even for companies with backup separate from their lower-cost online storage, SATA drive-based storage systems are able to do many things that tape systems do not, such as enabling grid

TOM COUGHLIN

Tom Coughlin is the author of numerous authoritative reports on digital storage a authoritative reports on digital storage and its applications. He is also the founder and organizer of the annual Storage Visions Conference (www.storagevisions.com) and lead consultant for Coughlin Associates, which provides digital storage technical and market analysis and consulting services. Coughlin is a frequent writer and international speaker on digital storage and storage applications. You can find out more about him at www.tomcoughlin.com.



In addition, SATA-based drive storage arrays are much faster in writing and reading data than a tape-based system. Disk-based systems built into an array don't need to be moved and mounted to access the data. Besides, the storage capacity of hard drives has been increas-

ing rapidly, faster than tape storage, and the prices of hard drives continue to decline, so the cost per gigabyte is approaching that of tape systems. This combination is making disk arrays increasingly attractive vs. tape backup sys-

Disk drive storage arrays usually don't use removable media, although there are hard disk removable media products (such as those from IOMEGA), and thus they usually don't need robotic systems and

> the extra real estate and service that these systems require. Overall, the total cost of hard disk-based storage systems using SATA disk drives is in many cases less than that of tape library systems. As a consequence, when companies look at replacing their older backup equipment, they are increasingly turning to disk drivebased systems.

Tape Fades To The Backup Background

Tape is becoming more and more a secondary backup storage behind a primary disk backup or even being used only for archival applications where the tapes may not even be stored in library systems that remain online but rather physically stored on shelves. Tape is more economical and probably more reliable than disk for such shelf-based long-term storage.

The result of these factors is that tape market growth is nearly stagnant, while disk-based storage arrays, particularly SATA arrays, show the largest unit and

storage capacity growth—larger than any other storage technology in the enterprise market. At the same time, the tape market is not going away anytime soon. New tape formats such as LTO-4 give tape systems a better cost advantage per gigabyte than disk drives, and there is a lot of installed tape hardware in the market still requiring media and services. Storage capacities of 10TB per cartridge are on tape manufacturers' road maps. Higher-capacity tape will allow tape to continue to be valued for lower-tier storage for very large data

Tape also is the most dominant archival storage media. Huge libraries of tape archives are in existence, and more tape archives are created annually. Archival storage will continue to create demand for tape for some time to come. However, active storage applications, such as backup, look poised to use less and less tape storage and more disk-based storage. Tape is not the only archival medium, of course; there are many folks who use optical storage for storing inactive content. Optical archiving is very popular in some industries, such as medical facilities and some entertainment companies.

However, the flexibility and performance of hard disk arrays combined with lower cost for significant storage capacity will put tape systems in increasing peril. The sun may not have set yet for tape used in backup, but the shadows are getting longer. Within a few years, it is likely that backup will almost exclusively be the province of disk drive storage arrays.

> Send your comments to tom@processor.com



Length

8 inch

2 foot 2.5 foot

3 foot

4 foot

5 foot

6 foot 6.5 foot 7 foot

8 foot

1 foot

2 foot

4 foot

6 foot

1 foot

2 foot

4 foot 5 foot

1 meter

1.5 foot

1 meter

1.5 foot

5.5 foot

3.5 foot

1.5 foot

Item

4663

1736

5413

1775

2965

9160

2986

4671

4403

4670

4142

8037

2832

7365

4962

1965

7231

1529

3779

Premise Wiring



Amps

10A

10A

10A

10A

13A

13A

13A

15A

15A

15A



18/3

18/3

18/3

18/3

18/3

18/3

18/3

18/3

16/3

16/3

16/3

16/3

14/3

14/3 14/3

14/3

14/3





9431



Amps

15A

15A







Gauge

14/3

14/3



Length

1 foot

2 foot

4 foot

5 foot

250v Black

4.5 foot

Item	Length	Amps	Gauge
8788	2 foot	15A	14/3
8826	3 foot	15A	14/3
9118	5.5 foot	15A	14/3
1409	8 foot	15A	14/3
8723	14 foot	150	14/3



Item	Length	Amps	Gauge
2881	1 foot	20A	12/3
3101	2 foot	20A	12/3
2992	3 foot	20A	12/3
3002	4 foot	20A	12/3
7784	5 foot	20A	12/3
2928	6 foot	20A	12/3
1007	2.5 meter	20A	12/3
7995	3 meter	164	12/3



Item	Length	Amps	Gauge
9509	1 meter	15A	14/3
8047	2 meter	15A	12/3
9157	2 meter	15A	14/3
4177	6 foot	10A	H05VV-F 3G1.5
9183	6 foot	15A	14/3

Power

To Order Cord Sets Visit www.StayOnline.com Call 888-346-4688 Or Email pcs@stayonline.com

8611

3 meter





Item	Length	Amps	Gauge
5917	1 foot	10A	18/3
3862	15 inch	10A	18/3
2996	1.5 foot	10A	18/3
1092	2 foot	10A	18/3
3858	3 foot	10A	18/3
7232	4 foot	10A	18/3
1063	5 foot	10A	18/3
6085	6 foot	10A	18/3
8797	7.5 foot	10A	18/3
4680	8 foot	10A	18/3
4679	10 foot	10A	18/3
5444	12 foot	10A	18/3
2966	15 foot	10A	18/3
3581	20 foot	10A	18/3
1394	25 foot	10A	18/3
7983	1.5 foot	13A	16/3
3284	2 foot	13A	16/3
8778	1 meter	13A	16/3
1597	3 foot	13A	16/3
6755	4 foot	13A	16/3
8829	5.5 foot	13A	16/3
8779	2 meter	13A	16/3
2889	6 foot	13A	16/3
7853	8 foot	13A	16/3
8780	3 meter	13A	16/3
7238	10 foot	13A	16/3
7534	20 foot	13A	16/3
3268	1 foot	15A	14/3
2133	1.5 foot	15A	14/3
3267	2 foot	15A	14/3
8612	1 meter	15A	14/3
8874	3 foot	15A	14/3
1795	4 foot	15A	14/3
8831	5 foot	15A	14/3
8605	2 meter	15A	14/3
2888	6 foot	15A	14/3
1924	8 foot	15A	14/3

Racks & Cabinets

14/3

15A

Image Spam Reaches Center Stage

How Can SMEs Combat This Evolving Threat?

by Don Reisinger

DURING THE PAST DECADE, spam has become one of the leading concerns of data center managers. Originally, spam would be sent to an employee's email address and contain text messages that offered bargains or possible remedies to their ailments. Once security software companies became aware of the threat, they created signature-based security solutions that effectively contained it. But in the past year, image spam has become a growing epidemic that most security companies have yet to contain. Since April 2006, image spam—which initially represented a small percentage of the spam market—has grown to over 30% of all spam messages. Unfortunately, this threat continues to grow, and there is currently no absolute solution in sight.

The Fight

Image spam is thus far the most difficult form of spam to contain. Instead of the old-fashioned text message, the recipient receives a picture, and the promotion message is encoded in it. In more recent developments, spammers have been sending messages to recipients that include a link to popular image hosting sites. Upon clicking the link, the recipient is shown the picture message, while the spammer enjoys the benefit of increasing email output by reducing the size of the transmitted messages. Even worse for businesses, email security programs do not yet have the ability to follow links in the email to find out if they are malicious.

To make matters worse, the majority of image spam sent to employees is rife with material inappropriate for a work environment. As Jeff Green, senior vice president of McAfee Avert Labs, says, "Image spam has been increasingly used by spammers to lure recipients into viewing pornography, buying penny stocks, or participating in get-rich-quick schemes."

For the past year, most security companies believed they were well on their way to eradicating most spam threats. In April 2006, when the first major outbreak of image spamming began, those companies (as well as the businesses employing the software) were left with a useless program that was incapable of confronting this threat head-on.

Even worse, most security companies are still lagging far behind the spammers, with no real solutions to curb this threat. Dmitri Alperovitch of Secure Computing says, "Many antispam vendors that relied on heavy local content-based analysis of emails had an extremely hard time adapting to this new threat environment."

Due to this delay between the inception of image spam and a semi-effective solution, employee inboxes were inundated with this new type of spam, and security companies scrambled to find a solution. As is often the case in the security field, the spammers anticipated the actions of the security companies and continually modified their methods, which made it even harder to detect.

Being Knowledgeable & Proactive

In an attempt to curb this threat, Secure Computing has instituted a new technique to confront image spammers. This technique, basically a real-time image analysis, "analyzes information in real time from a vast global distribution of sensors and analyzes behavioral patterns of how senders send messages and how content is distributed around the world."

The company believes the best way to confront image spammers is to be proactive and not rely on a local issue. Simply put, the company is taking the data it collects from around the world and using this as a way to block incoming spam messages. Because spam is a business that is governed by quick and mass-transmitted messages, Secure Computing believes it can effectively spy on spammers and use their own techniques against them.

But Sam Masiello, director of the threat management team at MX Logic, is not convinced a "one-layer" solution is best. His company believes businesses should start at the employee level and educate personnel on the perils of image spam and malware infections. MX Logic believes that knowledgeable employees are the key to a more secure office environment. With that said, MX Logic realizes employee education is not enough. Instead, Masiello suggests "as many layers of defense [as the enterprise] can afford to [employ]." These layers may include antivirus/antispam programs, as well as a Web-based proxy that includes desktop and network solutions.

Although we are still far away from a definitive solution to the issue of image spam, security companies are beginning to take the fight to spammers, and it seems the threat is starting to calm. In response to the security companies' software solutions, spammers have been employing far more elaborate techniques of obfuscation, which have slowed down their ability to deploy a large number of messages. By introducing random pixels, color changes, and animations, spammers have achieved their goal of fooling security solutions but have been forced to reduce output. According to Secure Computing, the company has seen a 30% reduction in image spam since the company's new solutions were put into place.

So what can data center managers do to protect their companies from the threat of image spam? So far, the answer is not what you might hope. Unfortunately, security solutions are not as effective as they should be, and IT managers bear the burden of keeping their companies safe. To make matters worse, image spam messages are larger than text-based messages, and a heavier load is being placed on business email infrastructures.

To combat these issues, IT managers should immediately remove email security solutions that are based on out-of-date

What Can IT Managers Do To Protect Against Image Spam?

- Realize and understand the threat your company faces in image spam.
- Educate employees on the threats of spam and especially image spam.
- Get rid of those old-fashioned email security solutions.
- Find a real-time image email security tool that monitors spammer techniques and uses those techniques against them.
- Use a variety of security solutions to increase the barrier between your company and the spammer.

signature-based methods. Upon removing the tools, IT managers should educate employees on the risks email messages may contain and inform employees that clicking seemingly innocuous links or images can put the entire business at risk. Next, managers should deploy a multilayered security initiative that includes real-time analysis and a Web-based proxy that includes desktop and network solutions.

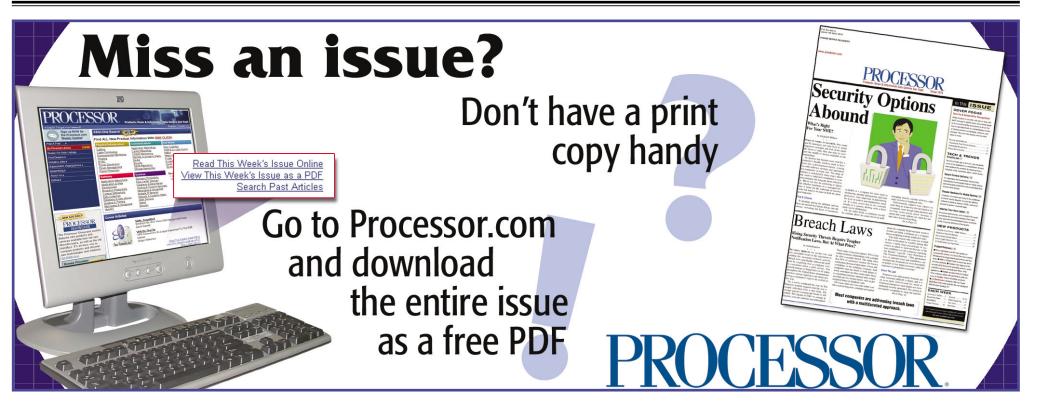
The War Wages On

Data center managers are confronting spamming threats each day they go to work. In prior years, threats came from the run-of-the-mill text message that slowed down business processes and promised headaches for everyone involved. Realizing text messages are not as effective as they were years ago, spammers created image spam to increase throughput and effectiveness.

At this point, IT managers are left without a thorough defense, and image spammers are constantly changing the way they send images to employees. But with time and the use of a multilayered approach, the threat of image spam could become a far less threatening issue. However, if security companies continue to scramble for effective solutions without producing results, IT managers should expect the coming months to produce some of the most dangerous spamming threats they have ever faced.

Security Companies To Help In Fighting Spam

Product	Description	Product To Consider	Web Site
McAfee	A multifaceted consumer and enterprise security company	McAfee Active Mail Protection	www.Processor.com/MFE
MX Logic	An online security service provider	MX Logic Email Defense Service	www.Processor.com/MX_Logic
Secure Computing	A security organization that specializes in inbound and outbound security services	IronMail E-Mail Gateway Security Appliance	www.Processor.com/SecureComputing
Symantec	A multifaceted consumer and enterprise security company	Symantec Mail Security with AntiSpam	www.Processor.com/SymantecCorp



Implementing An iSCSI SAN

Is iSCSI The Way To Go For Storage?

by Sixto Ortiz Jr.

A RECENT PERIPHERAL CONCEPTS survey revealed more than 35% of survey respondents had implemented an iSCSI SAN, a marked increase over the 20% of respondents in the previous year who said they implemented an iSCSI SAN. The survey data certainly indicates that marketplace concerns over iSCSI's security and performance may be fading away from the storage market's consciousness.

So, is iSCSI the way to go? What issues surround iSCSI SANs, and what should administrators keep in mind as they go about planning an iSCSI SAN implementation?

iSCSI: Gaining In Popularity

Clearly, the survey results from Peripheral Concepts indicate an increased adoption rate in the storage marketplace for iSCSI SANs. Jay Kramer, vice president of marketing for iStor Networks (www.Processor.com /iStorNetworks), a California-based provider of iSCSI network storage products, says a combination of market dynamics is driving the accelerated adoption of iSCSI SANs.

First, says Kramer, "Customers buy what they know, and as people learn about the value of an iSCSI solution, it becomes a compelling consideration for that customer's next storage investment." Also, Kramer adds, the high satisfaction level of early iSCSI adopters is sparking interest in the marketplace, along with the offering of iSCSI initiators—which enable connection of a server to iSCSI storage—by companies such as Microsoft (www.microsoft.com) and VMware (www.Processor.com/VMware).

Marc Farley, director of customer programs at EqualLogic (www.equallogic.com) and a widely regarded expert on storage, says the fact that the skill set required to implement iSCSI SANs already exists at most companies is a factor helping increase iSCSI adoption. Because iSCSI SANs can use existing TCP/IP networks, no specialized skills are needed to implement iSCSI beyond what should be there already.

And, adds Farley, the implementation costs are a lot less for iSCSI SANs because there are more hardware choices for switching equipment, and companies don't need cialized skills to install the equipment. Another noteworthy

to hire people with spe-

trend in the iSCSI marketplace, says iStor Networks' Kramer, is the accelerated adoption of 10GbE network backbones as the price point for 10GbE switches and network infrastructure has decreased. Kramer points to a recent Enterprise Strategy Group study that reveals more than 50% of 500 surveyed customers plan to have a 10GbE network deployed.

"1GbE is still the mainstream network of choice, but these higher-performance networks are going to enable greater connectivity and performance of IP-based SANs," says Kramer.

Getting Ready For iSCSI

Those who want to implement an iSCSI SAN in their environments should approach the preinstallation preparation from both a business-case and a technical point of view.

STORAGE

JUNE 8, 2007

In terms of technological considerations to keep in mind prior to deployment, EqualLogic's Farley says businesses looking to implement an iSCSI SAN should consider deploying a separate network



iStor Networks' (www.Processor.com/iStorNetworks) 10GbE is part of the company's GigaStorATX product line and provides support for 10GbE in an ATX form factor.



EqualLogic's (www.equallogic.com) PS Series iSCSI SANs internally provide all of the software needed to get an iSCSI SAN up and running with minimal problems.

dedicated to SAN traffic instead of using the existing TCP/IP network. But, Farley adds, even though this is a good idea, a lot of businesses don't do it

and proceed to install their iSCSI SANs so Go to Page 26

JUNE 8, 2007

"Customers buy what they know, and as people learn about the value of an iSCSI solution, it becomes a compelling consideration for that customer's next storage investment."

- iStor Networks' Jay Kramer

WIRELESS

Get A Clear Wireless Signal

MetaGeek Wi-Spy 2.4x Helps Troubleshoot Interference

THE 2.4GHz BAND is getting crowded, so you need to be able to discern ever-smaller gaps in the noise. That's why MetaGeek developed the Wi-Spy 2.4x—a 2.4GHz spectrum analyzer with an external, SMAcompatible antenna and nine times the resolution of the original Wi-Spy.



MetaGeek's new Chanalyzer 2.1 software offers improved graphics and more powerful controls.

Wi-Spy is the world's smallest 2.4GHz spectrum analyzer. It's so small (and inexpensive) because it harnesses the processing power of the computer you already own. Wi-Spy is perfect for troubleshooting interference from many devices, including Wi-Fi (802.11b/g/n), microwave ovens, cordless phones, and other Zigbee and Bluetooth devices.

With the addition of a reverse-polarity SMA adapter, Wi-Spy 2.4x offers the additional functionality and accuracy of adding an external antenna. The Wi-Spy 2.4x ships with a powerful little antenna, but it's a snap to add any RP-SMA-compatible antenna you choose.

MetaGeek's new Chanalyzer 2.1 software features improved graphics; powerful new play-through controls; and an even friendlier user interface that presents a more clear and concise view of your wireless landscape. Chanalyzer 2.1 supports both the original Wi-Spy and Wi-Spy 2.4x.

> Combined with the Wi-Spy spectrum analyzer, Chanalyzer will help you visualize, troubleshoot, and optimize your wireless network at the office or on the road.

Use Wi-Spy if:

- You deploy and maintain Wi-Fi networks (it's perfect for independent wireless consultants)
- Your Wi-Fi has intermittent bandwidth problems
- The microwave interferes with your Wi-Fi network
- Your network connection drops when the phone rings

\$399

A 2.4GHz spectrum analyzer designed for troubleshooting interference from Wi-Fi (802.11 b/g/n), microwave ovens, cordless phones, and other Zigbee and Bluetooth devices

(888) 489-1596

www.Processor.com/WiSpy



Protecting Your Exchange Server

When Email Goes Down, Heads Will Roll

EMAIL IS THE MOST widely used online application for most companies. The average business user sends and receives 137 emails per day. When email goes down, businesses lose money.

Using traditional technologies to recover a single email message can take hours, and rebuilding an entire email server can take a day or longer. Now, one company has solved the data protection problems of the past and at a new low price point.

NetMass offers the ServerSafe Remote Backup service, which makes backup and recovery easier, faster, and more reliable. ServerSafe replaces tape-based backup with an automated online solution that provides centralized backup of Exchange, file, and application/database servers.

With one easy solution, your data is backed up to professionally managed data centers that are disaster-hardened, temperature-controlled, highly secure, and offer exceptional business continuity.

ServerSafe can back up virtually all types of data, including live SQL, MySQL, and PostGreSQL databases, but a popular feature of the service is backing up email servers such as Exchange and Lotus Notes/ Domino and applications such as Outlook.

ServerSafe features include:

Continuous data protection. With conventional backup, an Exchange database gets backed up once daily or weekly. ServerSafe features a CDP module that continuously monitors the specified data source and automatically backs up changed data offsite. CDP effectively removes the data loss vulnerabilities between scheduled

backups by allowing users to restore data from any point in time. With ServerSafe, CDP is integrated and not an add-on to be purchased, installed, and maintained.

Speedy restores. ServerSafe offers extremely accessible data storage—recoveries can be measured in seconds rather than hours with simple point-and-click restore.

Message Level Restore. Allows users to restore individual or group emails (at the mailbox level) without interrupting the email server. The ability to recover a single lost message quickly and easily is a boon to administrators, saving time and resources by never having to restore an entire database when they only need select emails.

Partners. VARs looking to add data protection capabilities to their services can sign up as a NetMass partner and begin offering online backup services in a few days.

In addition, ServerSafe offers deduplication, bare-metal restore, and versioning.

Starting at \$40 per month with 30-day free trial

Easy-to-manage online backup service for Exchange, SQL, databases, Linux, Windows, and more

(800) 731-2737

www.Processor.com/Netmass





One-Time Pad Encryption

Can An Old Technique Make A Comeback?

by Kurt Marko

THE USE OF CRYPTOGRAPHY to secure communications from hostile, or at least unintended, interception has been around for centuries, ultimately evolving into a highly technical branch of information theory using sophisticated mathematical algorithms to scramble messages. Most encryption tech-

niques developed prior to the past few decades have demonstrated weaknesses and are trivial to crack with modern computational horsepower. However, one now-ancient algorithm, the one-time pad, or OTP, seems to defy history's dustbin by regularly popping up by promising insurance against radical new computational advances.



Here are two examples of portable security devices, MXI Security's (www.Processor.com/MXI) Stealth MXP and Route1's (www.route1.com) MobiKEY, that are protected by biometric authentication and integrate an AES-encrypted file system with the ability to store public key credentials.

Originally developed by Gilbert Vernam at Bell Labs in 1917, OTP's appeal rests on work done years later when information theory giant Claude Shannon proved its absolute theoretical impenetrability. Yet, as the saying goes, "In theory there is no difference between theory and practice. In practice there is." Real-world implementations of one-time pads exhibit shortcomings that invalidate the algorithm's theoretical perfection and have earned it a healthy dose of disdain within the professional cryptographic community.

How Do One-Time Pads Work?

The one-time pad algorithm works by combining the message, whether text or digital bitstream, with an equal-length string of random numbers that serve as the key. Because the OTP key is the same size as the message, every possible unencrypted message is equally likely—hence, theoretically perfect security. Thus, encrypting a 1MB PowerPoint slide deck requires a key of almost 8.4 million random bits. Furthermore, to achieve this theoretical perfection, the key material must be perfectly random and never reused.

One problem is that generating perfectly random numbers is both virtually impossible and, for any given string, unprovable. According to Eric Weisstein at Wolfram Research's MathWorld, "It is impossible to produce an arbitrarily long string of random digits and prove it is random." Currently, the methods for generating the "truest" random numbers, those best suited for one-time pads, use some sort of unpredictable physical process, such as radioactive decay, thermal/electronic noise, or drift between multiple hardware clocks.

One-time pads being a symmetric cipher—that is, the encryption and decryption keys are identical—further necessitates that the lengthy keys be preshared to all parties in a communication channel. This one-to-one mapping of key to message partner also means a separate key for each, leading to a logistic nightmare managing the lengthy keys. For example, if you plan

need for a near-perfect source of random numbers for the key material and the logistics of securely distributing large symmetric keys to multiple parties in a private communication channel. Solving the former problem requires specialized systems, usually a hardware device coupled with some mathematical software to improve the randomness of the output (so-called

One now-ancient algorithm, the one-time pad, or OTP, seems to defy history's dustbin by regularly popping up by promising insurance against radical new computational advances.

to send 100MB of encrypted material to 10 different parties, you need 1GB of perfectly random data—data that must be destroyed and never reused.

Problems & Controversy

Purveyors of one-time pad systems have met considerable skepticism, and outright scorn, from many in the professional cryptographic community. Tom Berson, owner of Anagram Laboratories and a Fellow of the International Association for Cryptologic Research, says, "Most things being sold as one-time pads are simply not. They are something else, usually some form of keyadditive system being sold as its more-secure brother to the uninformed."

The objections center on two aspects of OTPs which are difficult to implement: the

entropy distillation) along with processes to insure key values are never reused.

Key distribution is much more problematic, to the point of being paradoxical. According to security expert and author Bruce Schneier, "One way to look at encryption is that it takes very long secrets—the message—and turns them into very short secrets-the key. With a one-time pad, you haven't shrunk the secret any. It's just as hard to courier the pad to the recipient as it is to courier the message itself. Modern cryptography encrypts large things-Internet connections, digital audio and video, telephone conversations, etc.—and dealing with one-time pads for those applications is just impracticable." Schneier adds, "What a one-time pad system does is take a

Go to Page 26

It's All Right Here, In A No-Nonsense Format

Product Showcases
 Information Columnists
 Leading Manufacturers
 Technology News
 & Information



Don't Miss A Single Week. Call **800.819.9014** or go to PROCESSOR.com today!

Implementing An iSCSI SAN

Continued from Page 24

traffic flows over the same TCP/IP network as other traffic. If it's not economically feasible to deploy a dedicated network for iSCSI SAN traffic, Farley recommends that businesses use technology such as VLANs to segregate network traffic.

One option for segmenting traffic in an iSCSI SAN is CHAP (Challenge-Handshake Authentication Protocol). According to Farley, CHAP is "a great way of setting up secure connections between storage and servers" and can provide a simple way of planning how elements in a SAN will connect to each other.

In terms of a strategic, business-case viewpoint, iStor Networks' Kramer says an iSCSI SAN can provide increased value in terms of meeting the information strategies of an entire organization by deploying intelligent network storage that can be shared across a complex of servers. So, he adds, an iSCSI SAN can become a "pinnacle part" of the infrastructure required to deploy the information lifecycle management strategy needed to comply with regulatory, legal discovery, or business continuity requirements facing businesses today.

Possible iSCSI Pitfalls

EqualLogic's Farley says people will sometimes hang one machine on an edge node or switch and hang another machine that needs to communicate with that one on another edge node. A lot of times, Farley adds, this won't make a difference, but sometimes it does.

In terms of an iSCSI strategy for a business, Kramer recommends that administrators take an overall systems approach to their iSCSI SAN strategy. According to Kramer, iSCSI users should ask themselves the service-level objectives the overall business supply chain requires, from internal users to vendors, suppliers, and customers. For example, implementers should ask the level of performance, system availability, and data protection the business requires.

Also, he says, businesses should seek to deploy an iSCSI SAN solution that scales over time and grows alongside changing business needs. And, Kramer adds, those in the marketplace for iSCSI SAN products should take the time to evaluate more than the big-name product vendors.

"The right vendor," says Kramer, "will make the difference for a successful out-ofbox experience and an iSCSI infrastructure that meets your needs today and into the future "

iSCSI SAN: The Final Word

Deployment of an iSCSI SAN can provide a small to medium-sized enterprise with a cost-effective way to implement networked storage at a significant discount (both in terms of cost and complexity) to other network storage solutions, such as Fibre Channel. The fact that an existing or dedicated TCP/IP network can be used for iSCSI SAN storage data traffic is one of the most significant advantages underlying iSCSI SANs. But, as with all technologies, businesses should carefully evaluate the technology both from a technical and a business-case point of view before deployment. In short, careful planning up front will prevent unwanted deployment and maintenance issues later on.

One-Time Pad Encryption

Continued from Page 25

difficult message security problem (that's why you need encryption in the first place) and turn it into a just-as-difficult key distribution problem."

In many cryptologists' view, proponents of one-time pads also exaggerate the potential weaknesses of widely used and scrutinized block ciphers such as AES (Advanced Encryption Standard), often pointing to theoretical threats from quantum computing. However, as Schneier notes, "Cryptography is the only security problem we have solved. We have ciphers that are so secure they are never—never—the weakest link."

New OTP Products

Despite the practical implementation drawbacks of one-time pads, some vendors still find a market for the technology. Vadium Technology's (www.vadiumtech .com) AlphaCipher Encryption System addresses some of OTP's weaknesses with a key management system that allows distribution of very large blocks of keys, while keeping track of those that have already been used via a centralized indexing database.

Vadium has recently partnered with MXI Security (www.Processor.com/MXI) to use MXI's USB security tokens and secured storage as a distribution medium for the random number OTP keys. The MXI devices incorporate an AES block-encrypted file system, secured by passwords and/or biometrics, to protect the OTP key from unauthorized use. Furthermore, according to Kevin Casey, senior systems engineer

for Vadium, the OTP key is copy-protected, and the USB tokens themselves can be restricted for use on only certain MAC addresses. Mils Electronic (www.mils.com) also offers an OTP option for its email encryption product; however, it does not specify how key distribution and destruction is addressed.

OTP's Future

One-time pads continue to fascinate the hyper-security conscious with a promise of theoretically unbreakable encryption. Unfortunately, the implementation and usability problems associated with OTPs mean that almost all commercial products are flawed. Schneier says, "One-time pads may be theoretically secure, but they are not secure in a practical sense. They replace a cryptographic problem that we know a lot about solving—how to design secure algorithms—with an implementation

problem we have very little hope of solving. They're not the future. And you should look at anyone who says otherwise with deep and profound suspicion." He says, "It's cryptography's perpetual motion machine."

Berson says OTPs are a useful niche "in situations which require the highest form of cryptographic security," specifically for national governments that can afford the costs and overhead associated with implementing a true OTP system. Businesses would be better served by sticking with widely vetted block ciphers such as AES, using asymmetric PKI systems for key distribution, to secure network communications. Portable storage can be most effectively protected using conventional secure storage products such as MXI's USB devices or standalone encryption software such as TrueCrypt (www.true crypt.org).

Environmental Monitoring www.Processor.com/AVTECH15

JUNE 8, 2007 Solutions Start At **\$245**

Protect Your IT Equipment...Don't Wait Until It's Too Late!

- Digital Temperature, Digital Humidity, Main / Digital Power • Flood, Smoke, Sound, Light, Entry, Air Flow, Cameras,
- Dry Contacts, Switch Sensors, More.
- Alerting, Automatic Corrective Action, Logging, More.
- Web Interface, Ethernet, SNMP, Wireless, More.



221 Third Street Newport, RI 02840 Phone: (401) 847-6700 Sales: (888) 220-6700

HVAC

www.Processor.com/Rackmount71



\$2,497

JUNE 15, 2007

Tired of Overheated Server Rooms? The CoolCube 10 Offers an Exceptional Cooling Solution for Electronics.

- 50% smaller than competitors, provides 10,000 btu/hr
- Installs into any 2 or 4 post 19" rack or is portable in room
- Automatic restart function for power outages · Cost-effective for after-hours and weekend cooling
- Uses standard 115 VAC power source

SOLUTIONS, LTD

915 S. Jupiter Road Garland, TX 75042 Phone: (866) 207-6631 Fax: (972) 276-6484

HVAC

www.Processor.com/Atlas

May 11, 2007

Portable Air Conditioning

Ideal For:

- Server Rooms
- Electronic Equipment
- · Primary, Supplemental, or Emergency Cooling

Featuring:

- · Rentals and Sales
- Installs in Minutes
- · Locations Nationwide



PO Box 988 Phone: (800) 972-6600

Newark, CA 94560 Fax: (510) 713-3311

HVAC

www.Processor.com/Rackmount25

JULY 7, 2006

Air Conditioned Cabinet

- From 1,800 to 10,000 BTU • Rackmount & Sidemount
- Three sets of L-shaped universal vertical rails
- · Base, casters, and leveling feet standard
- Removable side panels
- Lexan front door (or solid steel) w/ lockable handle
- Steel rear door with lockable swing door handle
- Avail. in heights of 24u. 30u. 35u, 40u, 42u, 44u, 48u; depths of 24", 30", 36" and 42"; widths of 19", 23" & 24"

RACKMOUNT **SOLUTIONS, LTD** where customer service matters

915 S. Jupiter Road Garland, TX 75042 Phone: (866) 207-6631 Fax: (972) 276-6484

Power Distribution www.Processor.com/Galaxy

May 4, 2007



Galaxy Series 3-Phase Power Distribution

- Single or Dual Input Cords
- 2 Pole Circuit Breaker Protection
- Horizontal Format
- 208-240V 3-Phase Input at 20A, 30A, or 50A



1281 Wayne Ave Phone: (888) 311-6277 San Jose, CA 95131 Fax: (408) 436-9828

Power Management

www.Processor.com/ServerTechnology10



NOVEMBER 10, 2006

Switched CW-24V2

Power cycle individual or groups of outlets to remotely reboot network devices.

- 208V to 240V Single or 3-Phase power at 20 or 30A
- Access and Security: Web interface, SSL, SSH, Telnet, SNMP, LDAP, TACACS+, and RS-232 access
- Environmental Monitoring
- Fuse Retractor
- High-Density 24 IEC C13



1040 Sandhill Road Reno, NV 89521 Phone: (800) 835-1515 Fax: (775) 284 2065

WHAT'S HAPPENING

The eBay For Data Centers

Horizon Datacom Finds Sweet Spot With Network Switches & Routers

by John Brandon

Is there an EBAY for data center switches and routers? Yes; it's known as Horizon Datacom Solutions (www.Processor.com /HorizonDatacom), a used equipment reseller. Specializing in gear from Cisco Systems (www.Processor.com/CiscoSystems), Extreme Networks (www.Processor.com /Extreme), and Foundry Networks (www .Processor.com/FoundryNet), along with many other networking and communication products, the company started in 1995 and has expanded to provide consulting services, enterprise resource planning, and other technical services. The approach has paid great dividends, as the company has been frequently noted in business magazines as a top innovator in the field and has found a niche selling used data center equipment.

"Something we have noticed is the effect of eBay on the secondary market," says Randy Murray, vice president of marketing and operations at Horizon Datacom. "At first, it seemed like the only thing eBay was good for was driving down the price of equipment. But we've found that people quickly find out that you just can't buy expensive network gear from anyone with an eBay account. You've got to buy from a trusted source. So yes, eBay does keep the prices low on used gear, but trust is the name of the game."

"More companies are opening up to the idea of refurbished network equipment," says Murray. "Large enterprises have resisted purchasing too much refurbished equipment, but their budget pressures are making them loosen their grip on the 'only new' market. And smaller organizations are slowly becoming aware that the refurb market exists—they're very quick to take advantage of the savings. We've also seen big expansion in sales to the European Union, Central and South America, and Eastern Europe."

One example of Horizon Datacom's product offering and pricing is a Cisco WS-C2980G-A Switch that normally lists for \$8,995, now available at Horizon Datacom for \$1,395. And a Cisco 2621 XM Router that normally sells new for \$3,095 costs \$1,025 at the site. The company also offers free shipping on most products, which can help with capital expenditures where you have approval for the cost of the product only. Horizon Datacom claims that most companies save about 50% on equipment purchases. It also has Cisco-certified sales agents who can talk in detail about product features and not just pricing and availability.

Streamlining Company Operations

Horizon Datacom has experienced fast growth so far this year, expanding its staff by 20%. It created a new company identity and a new logo and has streamlined its buyback program such that it can receive a list of products that a company is selling and make a cash offer in less than one business day. "If a company has a great deal of equipment and doesn't have a clean inventory, we can arrange an onsite visit to review and prepare an offer," says Murray.

"We can also discuss a company's plans," Murray continues. "For example, if we know what a customer needs to achieve, we can help them decide on which equipment to sell, what to redeploy, and what additional equipment they'll need. We also offer services that help them extend the useful life of their own equipment, possibly refurbishing and redeploying in another location or for another use. Once the customer accepts our offer, we can also arrange for the equipment to be removed, packed, and shipped directly to us. To kick the process off, a customer can simply put a list together with the item part num-



ber and description and email it to purchas ing@horizondatacom.com. We make selling equipment to Horizon Datacom very easy."

As with any online vendor, the challenge is to keep the ecommerce site fresh and updated with new features to help data center managers find used equipment quickly and make the experience as easy as possible. Although the eBay interface has changed little in the last few years, it does set the precedence for adding new features that enhance the buying (and bidding) experience.

Horizon doesn't use a bidding system, but it is constantly looking at ways to make it easier to find data center equipment from specific vendors or for certain environments. "We're about to launch a completely redesigned Web site, offering what we believe is a hassle-free shopping experience," says Murray. "We'll be adding advanced search features for our real-time inventory and making product recommendations. Additionally, you'll see more Voice-over-IP equipment and additional manufacturers for complementary products in both the new and secondary markets."

Trends In Data Center Purchasing

While the company continues to refine the Web site and helps managers find the equipment they need (or make it easier to sell equipment), another challenge is staying in tune with data center trends. It monitors industry news and keeps a careful eye trained to new technology, advancements in wireless technology, how to push more bits through the network faster, security and firewall concerns, and Internet telephony advancements.

"Even more significantly, since 9/11 and the downturn in the tech market in late 2000, we've seen companies be very conservative in their purchasing," says Murray. "They're using equipment longer and looking for more ways to trim their expenditures, especially for big-ticket purchases like network infrastructure. But at the same time, the demands on company networks have been going through the roof. So this is an excellent time for the secondary market for network equipment. We've found that once a company becomes comfortable with the idea of buying refurbished hardware, once they see that they can depend on a vendor like Horizon Datacom to stand behind the equipment they sell, then we've got a long-term customer."

Murray notes the most popular used equipment category is network switches. This reveals how data centers are looking for ways to cut costs in the data center and are willing to consider used switches before they purchase other used networking equipment. As the company continues to refine its product offering, tune its Web site, and become more like the eBay for data centers, admins will likely continue to adapt to used equipment in the data center.

THREE QUESTIONS

Fast & Easy-To-Use Network Appliances

A10 Networks Keeps Things Simple

by Bruce Gain

A10 NETWORKS (www.Processor.com/A10Networks) is still considered more of a startup than a seasoned player after its creation in 2004, but the company's CEO and other management team members bring with them many years of experience from leading network firm Foundry Networks and other companies. A10 Networks' mantra is not only should network appliances accelerate data flow in the enterprise, but they should also be easy to install and maintain. Indeed, A10 Networks says its products help enterprises accelerate, optimize, and secure their applications.

Processor spoke with A10 Networks' CEO Lee Chen about challenges IT admins face and what his company's products mean for them.

■ What are the biggest IT-related issues facing today's small to midsized enterprise?

Chen: SMEs have the same IT-related issues as large enterprises but with smaller budgets and resources to manage IT deployments. The Internet changes everything. Efficient Web application deployment can reduce traditional IT headaches and lower operational costs. For example, it typically costs a company \$10 to \$13 to reset an employee's password. Forgotten passwords cost organizations hundreds of

thousands of dollars per year. The remedy is to deploy a good password self-service product and to create a Web site where employees answer a security question to reset their own passwords without relying on the help desk.

■ What should *Processor* readers know about your company's products?

Chen: From our prospective, there are many solutions out there that are way too complicated. From the beginning, we designed products to be very simple and easy to use. With our IDsentrie [network identity management appliance] and its forgotten password management services, users can manage their own passwords without the help of IT.

We add many different functions into the products we have, while making them easy to use. We also make them faster and very price-competitive. Sometimes IT administrators are frustrated with many vendor solutions today. They are managing many devices that offer similar functions, but they have to run somebody's password for one thing and have many separate devices, from firewalls to switches to routers, and you have no centralized base to manage these different devices.

Our flagship product is the AX Series Application Acceleration Switch, which [we think] provides an [excelent] price/performance server load balancer and recently won the Best of Interop Las Vegas 2007 award.... The AX 2000 comes with carrier-grade hardware and SSL acceleration at an aggressive price. [We think] an

enterprise conducting business over the Internet can easily justify the cost to deploy the AX 2000.

Our second product is our EX Series, which combines bandwidth management with user identity reporting capabilities. This product is very popular with SMEs because it allows them to manage capacity with visibility into who is doing what and when on their networks. The EX allows SMEs to leverage lower-cost ISP solutions to bond multiple Internet links together to service the growing bandwidth demands and allows them to identify more than 100-plus applications automatically with identity. With the ability to automatically identify the users, IT managers can now enforce computer usage policies and meet tougher security reporting requirements at the same time.

■ What makes your company unique?

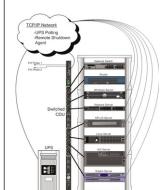
Chen: If you look at the greatest venture capital firms in Silicon Valley or worldwide, they do not just invest in ideas. The greatest ideas do not always get funded. [Instead], they invest in people. At A10, we have assembled a great team of engineers and sales and marketing [experts]. A lot of our engineers came from firms where they gained years of experience from [several application sectors]. We are building really powerful platforms from which we deliver our applications.

I come from Foundry Networks, which is one of the largest network companies in the United States. We also have employees from Cisco, Nortel, and [from other] established companies.

Power Management

www.Processor.com/SLS

APRIL 6, 2007



How Do You Ensure Maximum Uptime for Your Critical Devices?

Smart Load Shedding

Manage individual devices based on Temperature, Current Load, or UPS Power

- Integral Web Based GUI
- Remote Shutdown Agent
- Event Notification
- All UPS Types
- Auto-recovery



1040 Sandhill Rd Reno, NV 89521 Phone: (800) 835-1515 Fax: (775) 284-2065

Power Management

www.Processor.com/ServerTechnology9



Enterprise View

- · Remote managment of STI Sentry PDUs over IP
- View your entire system from Global View down to the rack level
- Centralized event logging with extensive logs and reports
- Thermographic mapping shows a visual depiction of hot spots in your data center



1040 Sandhill Rd Reno, NV 89521 Phone: (800) 835-1515 Fax: (775) 284-2065

Power Management www.Processor.com/Baytech3

FEBRUARY 3, 2006



24 Receptacle Remote Power Monitoring & Distribution

- Current, Voltage, Power, and Temp Monitoring
- LCD Screen Display
- RS232 Interface 120/208VAC 10,20,30A Models
- Power Distribution and Monitoring In One Unit



5239 Avenue A Long Beach, MS 39560 Phone: (800) 523-2702 Fax: (228) 563-7335

Power Management

www.Processor.com/Baytech1

FEBRUARY 3, 2006



8 Receptacle Power Control and Monitoring

- Current, Voltage, Power, and Temp Monitoring
- LCD Screen Displays Power Monitoring Information • RS232 interface, 120/208VAC 10,20,30A Models
- Turn On, Off, or Reboot any or All Receptacles



Long Beach, MS 39560 Phone: (800) 523-2702 Fax: (228) 563-7335

Power Protection

www.Processor.com/Baytech2

FEBRUARY 3, 2006



8 Receptacle Power Control / Monitoring w/Trans Switch

- · Current, Voltage, Power, and Temp Monitoring
- Automatic Transfer Switch
- RS232 or Network Interface 120/208VAC 10, 20, 30A Models
- Turn On, Off, or Reboot any or All Receptacles



5239 Avenue A Long Beach, MS 39560 Phone: (800) 523-2702 Fax: (228) 563-7335

Power Protection

www.Processor.com/ServerTechnology6

SEPTEMBER 1, 2006



Sentry 30-A Fail-Safe Transfer Switch provides fail-safe redundant power to single-power corded equipment.

- Fast Transfer Rate Power interruption will not affect equipment uptime or performance
- Patented arc-suppression and power in-feed sharing technology extend product life and performance
- High Density 100 to 240V and 16/32A



1040 Sandhill Rd Reno, NV 89521 Phone: (800) 835-1515 Fax: (775) 284-2065

Racks & Furniture

www.Processor.com/Hergo2

JULY 28, 2006

Rackmount Enclosure Cabinet

- 19" Enclosure
- 42 U x 36" Deep • 4 Mounting Rails
- Front and Rear Lockable Doors, choice of Solid, Tempered Glass or Perforated
- 2 Removable and Lockable Side Panels
- 4 Dual Wheels

On Sale and ready to go!



56-01 55th Avenue Maspeth, NY 11378 Phone: (888) 222-7270

Racks & Furniture www.Processor.com/Hergo3

DECEMBER 8, 2006



Relay Rack 4 Post 19" Relay Rack

- Vertical Mounting Space: 12U, 26U, 42U
- Offered in 3 Depths: 24", 30", 36" Deep • 4 Heavy-Duty Steel
- Uprights 4 Gliders
- Ships Knock-Down
- Easy to Assemble



56-01 55th Avenue Maspeth, NY 11378 Phone: (888) 222-7270 Fax: (888) 410-0671

Racks & Furniture

www.Processor.com/Rackmount24

JULY 7, 2006



NEBS Server Cabinet Certified to Seismic Zone 4

Based on the standard, patented frame design of our RS, RSP and FRS server rack series, this **NEBS-compliant configuration** has been tested and certified to meet Telcordia (Bellcore) GR-63-CORE requirements for ZONE 4 seismic earthquake environments.

GSA #GS-35F-0208R



915 S. Jupiter Road Garland, TX 75042 Phone: (866) 207-6631 Fax: (972) 276-6484

Racks & Furniture

www.Processor.com/Rackmount26

SEPTEMBER 1, 2006

Large Cable Bundle Network Rack

- Need a COMM rack with the rack rails moved to one side to accommodate large cable bundles?
- You have the option to slide your vertical rack rails horizontally as well as vertically. Set your rackmount width to 19 or 23 inches. Talk about versatility!
- Slide the rack rails to one side of the cabinet, allowing for additional 4 to 9 inches.



915 S. Jupiter Road Garland, TX 75042 Phone: (866) 207-6631 Fax: (972) 276-6484

Racks & Furniture

www.Processor.com/Rackmount70



March 30, 2007

Sound-Dampening **Quiet Server Rack** • This sound-dampening

- server rack is designed for applications that require a quieter environment than the average server room Two sets of "L"-shaped
- adjustable universal mounting rails on a patented aluminum extruded welded frame Side panels with full sound
- foam sheet; foam sealing tape between panels and frame
- Vented front door

RACKMOUNT **SOLUTIONS, LTD** 915 S. Jupiter Road Garland, TX 75042 Phone: (866) 207-6631 Fax: (972) 276-6484

Racks & Furniture

www.Processor.com/Hergo4



Special

FEBRUARY 16, 2006 **Technical Furniture**

 72"H x 30"W frame and leg assembly on flat levelers • (2) 30"W x 18.5"D mounting

- shelves • 30"W x 25"D leg mounted
- Set of 19" rackmount brackets - 3.5"H x 12"D
- (2) 30"W horizontal aluminum tracks for mounting of flat panel monitor, keyboard and mouse tray
- optional locking and non-locking casters

Power/cable management



56-01 55th Avenue Maspeth, NY 11378 Phone: (888) 222-7270 Fax: (888) 410-0671

KVM & Console Access

www.Processor.com/i-Tech75

Rackmount LCD Drawer w/KVM Over IP \$1900 New Product!



i-Tech SuperStore for Rackmount LCD Console Drawer

- 15", 17", 19" & 20" is also available
- Optional with 8/16 ports KVM
- New integrated with Remote Access via CAT5 and via IP
- New SUN Solaris Rackmount Keyboard

Free Grd Shipping for all Rackmount LCD KVM Drawers!



42828 Albrae St Fremont, CA 94538 Phone: (888) 483-2418 Fax: (510) 372-2736

Server

www.Processor.com/RackServ1025

May 25, 2007

Prices starting at

\$695

1U Rackmount Server



Mendax RackServ1025 complete with E-SATA Port

- Supports Intel Core 2 Duo processors and P4s
- Supports up to 4GB of DDR2 SDRAM
- Two Fixed 3.5" SATA drive bays
- Single 10/100 NIC
- Front External SATA Port



82 Margaret St, #132 Plattsburgh, NY 12901 Phone: (800) 963-6329 Fax: (800) 963-0431

1U 4-Bay Multi I/O RAID/JBOD Storage EnhanceRAID™ Ř4 RAID embedded or HBA dependant

• U320 SCSI

RAID Configuration

- GbE iSCSI • Firewire/USB
- **JBOD Configuration** • Multi-lane SATA/SAS
- Port Multiplier • eSATA

ENHANCE TECHNOLOGY, INC.

storage system with 4+ hot swappable HDD drive trays

Storage

www.Processor.com/Enhance4

12221 Florence Ave Phone: (562) 777-3488 Santa Fe Springs, CA 90670 Fax: (562) 777-3499

DECEMBER 15, 2006

Storage

www.Processor.com/SansDigital

JUNE 8, 2007



ACCNAS Hybrid NAS iSCSI Solution

Call for Price

- Supports both File-Level & Block-Level access in one unit
- RAID-on-Raid for External Volume
- Built in Multiple Volume Snapshots
- NAS-to-NAS Folder Replication: Asynchronous, Scheduled Differential & Full Copy
- NAS-to-NAS Mirroring with Automatic Failover
- Available in Portable Tower, 1U and 2U Form Factors



10038 Pioneer Blvd. Santa Fe Springs, CA 90670 Phone: (562) 949-1988 Fax: (562) 949-3328

Components

www.Processor.com/Dynapower

JANUARY 19, 2007



TC-iStar 500W+500W Redundant Power Supply

- Dual AC INPUT design
- Hot-swappable/hot-pluggable redundancy function
- Load sharing design for smart stress and heat distribution
- Hold up time: 16ms at max load and normal input voltage
- · Over power, voltage, and short circuit protection Strong power signal and cooling fan



230 Paseo Sonrisa Walnut, CA 91789 Phone: (888) 696-3962

Application Networking www.Processor.com/Traffic

APRIL 27, 2007



TRAFFIC SHAPING FIREWALLS **Network Visibility & Reporting**

- Stop wondering what is happening within the network and start taking control
- Unified bandwidth management combines network traffic shaping, network load balancing, and Site2Site VPN optimization with enterprise-class security

Telephony

www.Processor.com/OvisLink2



17165 Von Karman, Suite 112 Irvine, CA 92614 Phone: (888) 997-6237 Fax: (949) 477-0506

FEBRUARY 2, 2007

Grandstream GXP-2000 Enterprise Phone \$79.99

Application Networking www.Processor.com/AX

APRIL 6, 2007



AX Series Application Acceleration Switch

- · Makes data center applications available, fast, scalable and secure
- Improves user application response times by up to 8x
- Reduces HTTP bandwidth requirements by up to 75% Improves SSL processing by up to 80 times
- Provides best price-performance per watt in a 2U form factor



2309 Bering Dr San Jose, ČA 95131 Phone: (888) 210-6363 Fax: (408) 325-8666

Serial Networking www.Processor.com/EasySync

FEBRUARY 9, 2007



INDUSTRIAL RANGE: USB TO SERIAL CONVERTERS

- Rugged metal enclosures
- · Large range of serial port models
- RM models with built-in universal switch mode PSU with others having brick type PSU Choice of RS232, RS422, RS485 serial interface ports
- with surge protection



7235 NW Evergreen Pkwy Suite 600 Hillsboro, OR 97124 Phone: (503) 547-0909

- Powered by Texas Instruments Superior Voice Clarity, 130x64 graphic LCD
- Four line indicators
- Expansion module supports 112 programmable keys
- Designed and tested for full interoperability with leading IP-PBXes, softswitches (such as Asterisk), and most SIPbased environments



1301 John Reed Ct City of Industry, CA 91745 Phone: (626) 854-1805 Fax: (626) 854-0835

Network & Systems Mgmt.

www.Processor.com/NWPSW

DECEMBER 1, 2006



NetScanTools Pro

- Network Information Gathering: Reconnaissance and
- Security Testing: Uses active/passive means to look for networked devices & activitiy, and exposed open ports
- Training: Understanding network protocols, information gathering, and how network devices expose information



PO Box 1375 Sequim, WA 98382-1375 Phone: (866) 882-3389 Fax: (360) 683-9871

Data Center Services

www.Processor.com/HDS

Horizon Datacom Solutions provides you with reliable and time-tested sales and service for used and refurbished network hardware, including Cisco, Extreme Networks, Enterasys, HP, Foundry, among others .

We buy large or small quantities of network LAN/WAN, wireless, and VoIP equipment. Or you can use it as credit to update your current infrastructure. If you have surplus equipment, please note quantities, description, condition, and any other notes where possible.

If you frequently upgrade your equipment or have large quantities to dispose of, let us design an asset management plan for you. We can help you increase both cash flow and return on assets by emailing us your list of surplus equipment.



400 Lazelle Rd. Phone: (614) 847-0400 Columbus, OH 43240 Fax: (614) 847-1112

Repair

www.Processor.com/Pegasus

JANUARY 13, 2006



POS (Point-of-Sale) Barcoding / Scanners / **Barcode Printers**

Sales & Maintenance

- Quality Service Experienced Technicians
- Fast Return Servicing Major Brands

Symbol • Intermec • Zebra Metrologic • Cisco Access Pts.

Call Us Today!



4 Mustang Circle Forney, TX 75126 Phone: (800) 856-2111 Fax: (972) 564-5027





• SELL • RENT • LEASE • **REPAIR**

	<u>• SPEC</u>	CIALS •	
C6751A	OfficeJet K80XI\$85	Q1273A	DesignJet 4000 42"\$8,995
C8392A	7110XI AIO\$145	C1316A	9100C Digital Sender\$1,195
C9660A	LaserJet 4600\$750	Q5916A	9200C Digital Sender\$1,975
C6075B	DesignJet 1550CM+ 36"\$6,995	C6074B	DesignJet 1050C+ 36"\$5,495

/ <u>Color LaserJets</u>							
	C3985A	LaserJet 8500DN\$1,895					
	C4089A	LaserJet 8000DN\$495					
	C9661A	LaserJet 4600DN\$750					
	C9795A	LaserJet 2500L\$345					
	C7086A	LaserJet 4550N\$545					
	C7087A	LaserJet 4550DN\$650					
	C7098A	LaserJet 8550DN\$1,495					
	C7131A	LaserJet 5500N\$2,350					
	C8546A	LaserJet 9500N\$4,750					
	C8547A	LaserJet 9500HDN\$5,500					
	C9658A	LaserJet 5500DTN\$2,495					
	C9659A	LaserJet 5500HDN\$2,795					
	Q1320A	LaserJet 3500N\$695					
	Q1323A	LaserJet 3700N\$1,295					
	Q2488A	LaserJet 1500L\$395					
	Q3670A	LaserJet 4650DN\$2,095					
	Q3702A	LaserJet 2550L\$275					
	Q3716A	LaserJet 5550DTN\$3,375					
		5.					
	0.4700.4	Plotters					
	C4709A	DesignJet 750C+ 36"\$1,895					
	C3198B	DesignJet 755CM 36"\$2,095					
	C7789C	DesignJet 800PS 42"\$4,795					
	C6075A	DesignJet 1055CM 36"\$4,995					
	C4703A	DesignJet 2000CP 36"\$1,995					
	C6019A	DesignJet 5000PS 42"\$5,295					
	Q1254V	DesignJet 5500PS 60"\$11,995					
	Q1274V	DesignJet 4000PS 42"\$10,995					
	Call for all New and Used						
	HP Equipment!						

HP Equipment!



All above equipment is refurbished and

carries a 90-day parts & labor warranty.

• Visa, MasterCard & American Express accepted Many orders shipped the same day!

	<u>LaserJets</u>	
C2001A	LaserJet4	\$175
C2037A	LaserJet 4+	
C2039A	LaserJet 4M+	\$325
C3166A	LaserJet 5SI	
C3167A	LaserJet 5SI MX	\$495
C3916A	LaserJet 5	\$250
C3917A	LaserJet 5M	\$295
C4110A	LaserJet 5000	\$695
C4118A	LaserJet 4000	\$295
C4120A	LaserJet 4000N	\$325
C4252A	LaserJet 4050T	
C4254A	LaserJet 4050TN	\$445
C4265A	LaserJet 8150	
C4266A	LaserJet 8150N	
C4267A	LaserJet 8150DN	\$795
C8049A	LaserJet 4100	\$495
C8050A	LaserJet 4100N	
C8051A	LaserJet 4100TN	\$695
C8052A	LaserJet 4100DTN	
C8521A	LaserJet 9000DN	\$2,795
C8253A	LaserJet 9000MFP	
C9124A	LaserJet 3300MFP	
C9148A	LaserJet 4100MFP	\$1,295
Q1860A	LaserJet 5100	
Q1861A	LaserJet 5100TN	
Q2425A	LaserJet 4200	
Q2426A	LaserJet 4200N	
Q2428A	LaserJet 4200DTN	
Q2432A	LaserJet 4300N	' '
Q3723A	LaserJet 9050DN	+ ,
Q3942A	LaserJet 4345MFP	\$2,250

360 Technologies Inc.

15401 Debba Drive Austin, TX 78734

www.360tech.com Info@360tech.com

Toll Free: 888-883-0360 Tel: 512-266-7360 Fax: 512-266-7366 IM: HPat360





Source for Printers





\$799



HP LJ 9000 \$1299

ne	HP LJ 1
Resellers	HP LJ 1
Resource	HP LJ 2
Il printers include parts ,	
nd labor warranty. This	HP LJ 2
only a small sample	UDILIC
f what we have in	HP LJ :
tock. Please call for rice and availability for	HP LJ 4
ther models,	HP LJ 4
ccessories and parts.	HE LU
	UDILL

HP LJ 1200\$199	HP LJ 4200\$469
HP LJ 1300\$179	HP LJ 4250\$709
HP LJ 2100\$199	HP LJ 4300\$599
HP LJ 2200\$209	HP LJ 4345X MFP\$1,899
HP LJ 3800\$759	HP LJ 4600\$529
HP LJ 4000\$219	HP LJ 5100\$645
HP LJ 4100\$289	HP LJ 5500\$1,099
HP LJ 4101 MFP\$1,599	HP LJ 8150\$429

PROCESSOR

Subscribe Today!

Call (800) 819-9014



Subscribe Online!

www.Processor.com

ALERT-A-RACK SERVER RACK SYSTEM

Protect Your Mission-Critical Hardware From Heat & Humidity!



 Alerts You If Your Heat Or **Humidity Exceeds Your Settings**

800-588-3554 • 608-268-4300 www.globalprinter.com • Free Tech Support

- Maximum Air Flow Design
- Locking Full Perforated Doors • 2 Sets of Heavy-Duty Stainless
- Steel Multivendor Adjustable Rack Rails • Eye-Pleasing Extruded Aluminum
- Frame
- · Available in 22U, 36U, or 42U and 31.5" or 39.4" Deep



Arlington, TX 76011 Fax: (817) 649-1770 Phone: (800) 458-6255



Digital Brothers Group

770-931-7732 Fax 770-931-9416

www.dbgweb.com salesp@dbgweb.com

AlphaServer GS160 Model 16

Base System for OpenVMS

- DY-160CG-AA
- One Alpha 21264 Processor 1224 MHz
- Four Quad Building Blocks
- One 14-Slot PCI Shelf
- OpenVMS Operating System License

ALSO AVAILABLE:

- Additional 1224 MHz CPU w/SMP Additional Memory
- · Additional PCI Shelves
- Additional PCI Options



2 Systems In Stock!

Authorized **COMPAQ**® Reseller

WE WILL BUY YOUR USED HARDWARE!

PRINTROM SPARE PARTS • EXCHANGES • SUPPLIES TW-AX • CO-AX • IGP™ QMS[®] Magnum[®] Data Reliance Corporation "Your Reliable Printer Source" www.datareliance.com Ph: 574-935-9550 Fx: 574-935-9555



- HP PROLIANT (COMPAQ)
- HP INTEGRITY (HP9000)
- Sun Microsystems
- CISCO ROUTERS
- IBM SYSTEM STORAGE
- BROCADE SWITCHES
- EMULEX HBAS
- AND MORE

VIBRANT BUYS EXCESS AND OFF-LEASE SERVERS, STORAGE AND NETWORKING EQUIPMENT

952-653-1700 | SALES@VIBRANT.COM

BUY * SELL * LEASE * REPAIR

\$\$ CASH \$\$

\$\$ CASH \$\$



WANTED!

Magnetic Tape Media: 9940 • 9840 • 3590 • LTO • SDLT

Visit our new web site at: www.mediarecovery.com

Please Contact Al Bass 214-630-9625 abassignani@mediarecovery.com



\$\$ CASH \$\$

\$\$ CASH \$\$

Overwhelmed By NetApp® **Support Costs?**



Zerowait's prices for service, support and parts will help you shrink the cost of legacy system support down to size!

THE AFFORDABLE ALTERNATIVE TO NETAPP CONTACT US TODAY FOR A COMPETITIVE QUOTE!



888.811.0808 WWW.ZEROWAIT.COM SALES@ZEROWAIT.COM



Call for a Quote Today!

- Quick Shipping
- In-house Technical Staff • International Shipping

Phone 800-447-1156 617-547-4005 617-354-1417 Fax E-mail sales@eli.com

288 Norfolk Street Cambridge, MA 02139

For our complete online catalog go to www.eli.com

SUN MICROSYSTEMS

Sun Fire Sun Blade StorEdge 3310/3510 Array

Sparcs **CPUs**

Drives Memory **Entry/Midrange Servers**

DEC/HP

Alpha DecServers Comm. Gear VAX Memory/Disks

CISCO

Routers Catalyst Series Switches **Network Modules** Pix Firewalls Port Adapters VPN+ Security Product

EQUIPMENT MANAGEMENT, INC Phone: (978) 534-2074 Fax: (978) 534-5574 Email: rob@emisolutions.com rico@emisolutions.com WEB: www.emisolutions.com 42 Jungle Road, Leominster MA 01453 401930-001 MOTHER BOARD 311242-001 \$14900 \$1795 CPQ System Board SW3900 HP MSL6030 CR 2-ULTRIUM **\$6900** HP SURESTORE E 1/20 **\$1650** 460 DRIVE LIBRARY-RACK 283056-B21 \$1900 CPQ ESL9322 BACKPLANE \$4900 SANSWITCH 2/16-EL MODULE 331196-B21 287055-B21 CPQ MSL6060 2-DRIVE \$3900 \$7900 SAN SWITCH 2/16 LIBRARY RACK Immediate Availabiltiy Lowest Prices HP SURESTORE E \$2900 Blind Shipment BRIDGE FC 4/1 00 () (MB • DRIVES • PERIPHERALS • CPU'S CONTROLLERS and MORE A minority owned business BUY, SELL, TRADE ALL BRANDS



purchasing@ccny.com





OKI, TallyGenicom and **Printronix Printers**

New and Refurbished WyseThin Clients and **General Purpose Terminals**

Call Toll-free 800.457.8499



InBus Engineering Has the World's Largest Inventory of Hard-to-Find

Intel Boards and Systems 60,000 Square Foot Facility: Repair -- Testing -- Burn-in Two Decades of Intel Products and Service

Intel OEM PC Desktops and Servers Experienced Engineering Staff Provides Expert Technical Support Same Day Delivery

> Warranty On All Products and Services We Purchase Excess Inventory Call (925) 454 -2546

6233 Industrial Way, Livermore, CA 94550, Tel (925) 454-2500 Fax (925) 454-2501





HARD DRIVES

New/Used/Pulls * All Interfaces Notebook/Desktop/Servers * Working & Non-Working

Laptop/Desktop/Server Systems * Close-Outs Peripherals * ICs * Memory * Ink Toners * Cell Phones

ARC Components, Inc

818.576.0016 Ph. 818.576.0081 Fax

e-mail: arccompo@yahoo.com

www.arcdrives.com

Trading

– Advanced 36 Systems

· 21 Years Experience

— System Upgrades

— Tape Subsystems

— We Buy, Sell and Lease IBM - AS/400 • RS/6000 • Servers

– Printers, Terminals, Modems

Ph: (877) 715-3686

We Also Buy

All Other

Brands of

Computer

Hardware!

Information Fx: (405) 715-3682 Technology www.itechtrading.com

S





We also buy Cisco, Juniper, 3Com, and Foundry

Phone: (800) 503-1349 sales@networkrs.com



Your Leading Independent Reseller Since 1987 **IT Asset Disposition Solutions Provider** 35 Eastman St. S. Easton, MA 02375 (800)426-5499(508)230-3700

COMPUREX

SYSTEMS CORPORATION



sales@ccny.com

- www.compurex.com
- Fax: (508)238-8250



We **Buy** Used Cell Phones

www.pacebutler.com 1-800-248-5360 • (405) 755-3131



B

Memory For PC & MAC We Buy Immediate Need For: 256 & 512 MEG DDR 2700 & 3200 Please Call **Memory** (239) 596-2254

FAX: (239) 596-2256

jeffsms@aol.com www.smsassembly.com

SMS MEMORY We've Been In the Memory Business Since 1987

Tape Drive Repair

DDS, DAT, DLT & SDLT, AIT, Travan, QIC, Mammoth, Ultrium LTO



Archive, Compaq, HP, Exabyte, Quantum, Seagate,

Standard turnaround time is 7-10 days

Call for Prices! (800) 286-0651 email: sales1@tsli.com



FLOPPY DRIVES • CDROMS • CONTROLLER CARDS

New/Used/Pulls • Notebook/Desktop/Servers All interfaces and capacities

www.drivesolutions.com

818-718-6900 Ph, 818-718-6100 Fax

email: sales@drivesolutions.com or purchasing@drivesolutions.com







|-888-443-3852 datanetworks INTERNATIONAL www.dni-llc.com

Tel. 1-973-486-0440 / Fax. 1-973-486-0445 / E-mail: pr@dni-llc.com 90 -100 Route 206, #290 Stanhope, NJ 07874



DLT-LTO-AIT-AME-DDS-QIC-3480-3590-9840-Etc.

New & Used - All Types of Data Tape Media

Certified DATA DESTRUCTION Assured World's #1 Tape Buyer is The Data Media Source Highest values paid - Free pick-up at your site 1-800-252-9268 www.datamediasource.com



800.421.6572

Ph: 770.840.8994 • Fax 770.840.9228 www.ismweb.com • info@ismweb.com

IBM iSeries • IBM pSeries • Sun • HP9000 • Cisco

We Buy, Sell, Lease and Provide Short and Long Term Rentals 90 Day Warranty on All Refurbished Systems, Memory, Disk & Parts Call Us To Save Up To 90% On Used Certified Equipment!

CALL ISM FOR ALL YOUR MIDRANGE COMPUTER NEEDS!

RapidNet

PRE-TERMINATED,

PRE-TESTED,

PRE-ANYONE ELSE.





phone: [800] 822 4352 email: info@htamericas.com www.hellermann.tyton.com/pro

